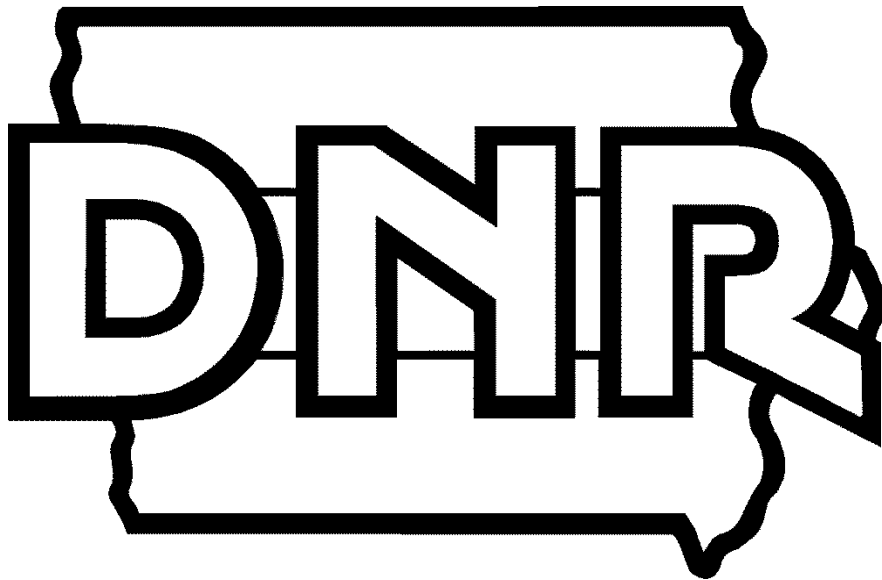


IOWA TITLE V

OPERATING PERMIT APPLICATION

INSTRUCTIONS

(Revised 7/2017)



Iowa Department of Natural Resources
Environmental Services Division
Air Quality Bureau
7900 Hickman Rd Ste 1
Windsor Heights, Iowa 50324

Application Instructions

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IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS

Application Introduction

Title V Program Basics

Air Quality Permitting History

Prior to the passage of the Clean Air Act Amendments of 1990 the Iowa Department of Natural Resources (DNR) only issued air quality construction permits. The purpose of the construction permit is to evaluate before equipment installation, whether the proposed equipment or air pollution control equipment has the potential to comply with state and federal emission standards and the National Ambient Air Quality Standards (NAAQS). With the passage of the Clean Air Act Amendments of 1990, states are required to implement an air quality operating permit program. Operating Permits are designed to ensure equipment continues to perform as designed, to protect ambient air quality. While construction permits are issued for the life of the equipment or until a modification is issued, operating permits have a maximum term of 5 years and must be renewed.

Title V Operating Permit Application Contents

The Title V Operating Permit Application is divided into 2 parts. Part 1 includes general facility and emission point information such as process flow diagrams, stack characteristics and location, emission unit descriptions, potential-to-emit information, annual emissions inventory and emissions fee payment information. In addition, Part 1 includes the requirement for the responsible official to sign the application to certify that the statements and information in the application are true, accurate, and complete.

Part 2 of the Title V Operating Permit Application requires the identification of all applicable requirements for each emission unit at the facility and plans for demonstrating compliance on an ongoing basis. For those sources at the facility that are not in compliance, schedules for coming into compliance are to be included in Part 2 of the application. A Title V permit cannot be issued unless the facility is in compliance with all requirements or is complying with an enforceable compliance schedule.

Title V Applicability

Facilities are subject to the Title V Operating Permit Program if, considering enforceable permit restrictions, potential emissions¹ exceed any of the following:

| MAJOR SOURCE THRESHOLDS | |
|--|-------------------|
| Pollutant | Threshold |
| Particulate Matter (PM _{2.5}) (Aerometric Diameter < 2.5 Microns) | 100 tons per year |
| Particulate Matter (PM ₁₀) (Aerometric Diameter < 10 Microns) | 100 tons per year |
| Sulfur Dioxide (SO ₂) | 100 tons per year |
| Nitrogen Oxides (NO _x) | 100 tons per year |
| Volatile Organic Compounds (VOCs) | 100 tons per year |
| Carbon Monoxide (CO) | 100 tons per year |
| Lead | 100 tons per year |
| Any Single Hazardous Air Pollutant (HAP) | 10 tons per year |
| All HAPs combined | 25 tons per year |

¹Potential to emit for criteria pollutants (PM_{2.5}, PM₁₀, SO₂, NO_x, VOC, CO and Pb) may include fugitives for some source categories. Refer to 567 IAC 22.101 and 22.100 definitions of "major source" and "stationary source categories."

The full definition of Title V applicability, which includes facilities that are subject to New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP) and Acid Rain program, is found in 567 IAC 22.101. Individuals completing a Title V application should read 567 IAC 22.101-22.102 prior to filling out an application. Note the source category exemptions specified in rule 22.102 for certain non-major sources subject to a NSPS or NESHAP.

Potential to Emit

Potential to emit is calculated assuming the equipment is running at maximum capacity while operating at the maximum hours of operation under its physical and operational design. Usually, maximum hours of operation are 8760 hours per year unless enforceable limitations on hours of operation have been incorporated within the construction permit or an enforcement order for that equipment. Bottle-necks in a production line do not constitute an enforceable limitation on production unless those bottle-necks are included as an operating condition in a federally enforceable permit. Therefore, in most cases bottle-necks cannot be used as a basis for limiting an emission unit's capacity below the manufacturer's rated capacity. Only enforceable limitations on raw materials, fuels, capacity or hours of operation can be used to limit potential emissions.

Only enforceable limitations on raw materials, fuels, capacity or hours of operation can be used to limit potential emissions.

Fugitive emissions of criteria pollutants must be included when calculating potential emissions to determine Title V applicability if the facility is one of the 27 "Stationary Source Categories" listed in 567 IAC 22.100. If the facility is not one of the 27 "Stationary Source Categories", fugitive emissions of criteria pollutants are not included for determining applicability. Please note that fugitive emissions of HAPs must be included when calculating potential HAP emissions to determine Title V applicability regardless of whether the facility is one of 27 "Stationary source Categories."

Unpermitted Sources

If a construction permit has not been obtained for an already constructed source that is subject to construction permitting requirements - a plan and schedule for obtaining the construction permit, including methods verifying compliance, and establishing any monitoring and reporting regimes must be included in Part 2 of the Title V Operating Permit application. Please note the following:

- If process equipment or control equipment has been installed, constructed, or modified at the facility after September 23, 1970, and the process is not specifically exempted in the rules from construction permitting, a construction permit should have been obtained prior to initiating construction.
- Sources of VOCs must obtain construction permits if constructed or modified since April 1987.
- Sources which have not obtained the necessary construction permits prior to construction must obtain those permits ("as-built" construction permits).
- Sources not required to obtain construction permits are still required to be in compliance with all applicable air quality rules.

Title V Fees

Annual Emissions Fee

The Clean Air Act Amendments of 1990 established an annual emissions fee based on actual emissions. Emission fees are based on actual emissions reported in the emissions inventory for the previous calendar year. The annual emissions fees are due July 1. The DNR and the Iowa Environmental Protection Commission (EPC) review the fee structure on an annual basis and adjust the

fee as necessary to cover all reasonable costs required to develop and administer the programs required by the Act.

Application Fee

The EPC adopted rules and a Fee Schedule in 2015. This includes a fee for renewal and initial Title V applications. By submitting an initial or renewal application or requesting a pre-application meeting / assistance, the applicant agrees to pay for all fees incurred for activities related to the application according to the current Fee Schedule. The current Fee Schedule is located at <http://www.iowadnr.gov/aqfees>. Title V facilities will be billed on a frequency basis determined by the DNR.

Title V Operating Permit Application Due Dates

Unless otherwise specified, the due date for new Title V sources is within 12 months of becoming subject to Title V program. A renewal application must be submitted at least 6 months, but not more than 18 months, prior to the date of expiration of the current Title V Permit.

Title V Application Submission Requirements

The owner or operator of an air pollution source subject to the Title V Operating Permit Program is required to submit one copy of the Title V application to the DNR. If the facility is located in Linn or Polk County, please send one additional copy to the corresponding county directly. A copy must also be sent to EPA Region VII, Attention: Chief of Air Permits, Air Permits and Compliance Branch, 11201 Renner Blvd., Lenexa, KS 66219. Facilities may submit applications electronically using the State Permitting and Air Reporting System (SPARS). If submitting using SPARS, there is no need to send hard copy to EPA, Linn and Polk counties or the DNR. The application must include all emission points, emission units, air pollution control equipment, and monitoring devices at the facility. All emissions generating activities, including fugitive emissions, must be included.

When completing renewal applications, it is helpful to have the lists of equipment removed from service, construction permits that have been rescinded and any new equipment installed since the issuance date of the last Title V Permit.

If using the State Permitting and Air Reporting System (SPARS) to submit the application, follow the SPARS instructions at <http://www.iowadnr.gov/Environmental-Protection/Air-Quality/eAirServices>.

Hardcopy application forms may be downloaded from <http://www.iowadnr.gov/AirOperatingPermits>. When filling out hardcopy forms please note the following:

1. Provide an index to the application. Applications may be organized either in form number order, or by emission point number.
2. Type or print all information submitted. Illegible documents are not acceptable and will be returned as incomplete.
3. Emission factors are the basis for many company's calculations of emissions. The DNR will not provide facilities with emission factors directly. However, if a facility does not have test data or continuous emission monitor data from which to calculate emissions the facility will need to obtain access to EPA's emission factors. Sources of emission factors are as follows:

- CHIEF Website - This is EPA's source for the latest information on air emission inventories and emission factors. The Clearinghouse for Inventories and Emission Factors (CHIEF) provides electronic access to several tools for estimating emissions of air pollutants. Access and download the following from the CHIEF website: SPECIATE, WebFIRE, TANKS, LandGEM, all of the AP-42 stationary source volume, and the draft parts of AP-42 undergoing revision. To access the CHIEF website, go to <http://www.epa.gov/chief>.
- WebFIRE is the online version of the Factor Information and Retrieval Data System (FIRE) and it has replaced the software application, FIRE version 6.25, and the Microsoft Access version of the database. An online version of FIRE allows more frequent updates and easier access. WebFIRE contains EPA's recommended criteria and hazardous air pollutant emission estimation factors. It includes information about industries and their emitting processes, the chemicals emitted, and the emission factors themselves. WebFIRE can be accessed from the CHIEF website <http://www.epa.gov/ttn/chief/webfire/index.html>.
- The Compilation of Air Pollutant Emission Factors, AP-42, is the recommended source of air pollutant emission factors, with descriptions of activities producing criteria and hazardous air pollutant emissions. Emission data for many polluting activities are obtained from source tests, material balance studies, and engineering estimates. AP-42 can be accessed from the CHIEF website <https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors>.
- TANKS is a user-friendly PC software program for estimating volatile organic compound emissions from both fixed and floating roof storage tanks. To download TANKS go to CHIEF web site <https://www3.epa.gov/ttn/chief/software/tanks/index.html>.
- SPECIATE is a clearinghouse for speciation factors for both volatile organic compounds (VOC) and particulate matter (PM) and presents speciation data by source category and by pollutants. To download or browse the SPECIATE database, go to the CHIEF website <https://www.epa.gov/air-emissions-modeling/speciate-version-45-through-32>.
- LandGEM, Landfill Gas Emissions Model, is an automated estimation tool with a Microsoft Excel interface that can be used to estimate emission rates for total landfill gas, methane, carbon dioxide, nonmethane organic compounds, and individual air pollutants from municipal solid waste landfills. It can be downloaded from the CHIEF website <https://www.epa.gov/catc/clean-air-technology-center-products#software>.
- Other sources of emission factors are trade associations and equipment manufacturers. Be sure to identify the source of the facilities emission factors on Form 3.0, and Form 4.0.

Title V Permit Modifications

A Title V source must apply for a Title V permit modification to implement changes to their facility. There are generally three types of modifications (See 567 IAC 22.111, 112, and 113 for complete information):

A. Administrative Amendment:

- An administrative amendment corrects typographical errors, updates facility contact information or ownership and includes permit revisions that require more frequent monitoring or reporting.
- The following are needed for an administrative amendment: a written request and Form 1.0.
- Changes may be implemented immediately upon submittal of the amendment request.

B. Minor Modification:

- A minor modification includes changes that do not violate any applicable requirements; do not involve significant changes to existing monitoring, reporting or record-keeping requirements in the Title V permit; do not require or change a case-by-case determination of an emission limit or other standard; and do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed in order to avoid an applicable requirement to which the source would otherwise be subject.
- A minor modification is generally used for changes that are more than administrative, but that are not required to be processed as a significant modifications. Examples are the corrections of stack characteristics, minor operational limit changes in a non-PSD construction permit, a newly permitted emission point that is not subject to any NSPS or NESHAP standards.
- The following are required: A written request, Form 1.0 and only the forms involving the changes are needed. Most of the time Part 2 forms are not necessary.
- Changes may be implemented immediately upon submittal of the minor modification application.

Save Time with an EZ Mod Form

EZ Mod form is an easy way to request a minor modification. Use this form if all of the following conditions are met:

1. Application is for a minor modification to an existing Title V permit due to newly issued or modified construction permits;
2. There are no compliance issues regarding the included equipment; and
3. The facility is not located in Linn or Polk County

C. Significant Modification:

- A significant modification includes, but is not limited to, all significant changes in monitoring permit terms, every relaxation of reporting or record-keeping permit terms, and any change in the method of measuring compliance with existing requirements.
- The following are required: A written request and all Part 1 and Part 2 forms that are related to the changes in the modification.
- A significant permit modification must be submitted no later than three months after commencing operation of the changed source

Definitions

The following sections of Iowa Administrative Code (IAC) contain definitions related to the Title V program.

- Title V definitions, the list of "Hazardous Air Pollutants, and the list of "High Risk Pollutants" are found in 567 IAC 22.100: <https://www.legis.iowa.gov/docs/iac/rule/11-17-2010.567.22.100.pdf>

- General air program definitions are found in 567 IAC 20.2
<https://www.legis.iowa.gov/docs/iac/rule/10-07-2009.567.20.2.pdf>
- Acid Rain definitions are found in 567 IAC 22.120:
<https://www.legis.iowa.gov/docs/iac/rule/567.22.120.pdf>
- Nonattainment area definitions are found in 567 IAC 22.5(1):
<https://www.legis.iowa.gov/docs/iac/rule/12-14-2011.567.22.5.pdf>

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS

PART 1 – Emission Information and Application Certification **FORM 1.0 Facility Identification and Application Certification**

This is a required form for all Title V facilities.

Form 1.0 provides basic information regarding facility ownership, permit contact, responsible official, and application certification.

Permit Application Type:

Mark the checkbox that corresponds to the type of application being submitted.

Initial* checkbox will only be checked if this is the first Title V Permit Application submittal. Do not check this box if submitting additional information or if renewing a Title V permit.

Renewal* checkbox will only be checked if this is a renewal application to renew an existing Title V permit. Do not check this box if submitting additional information

Supplemental Information is additional information requested by DNR or information submitted by facilities to report changes to equipment or operation between the times when a permit application was submitted and permit issuance. Supplemental information must include a Form 1.0. Once a permit is issued, use an appropriate modification application to update the changes to equipment or operations in an existing Title V permit.

Modification applications are submitted when facilities undergo changes to equipment or operations between renewals. Modifications can be classified as Administrative (as defined in IAC 567 - 22.110), Minor (as defined in IAC 567 - 22.111), or Significant (as defined in IAC 567 - 22.112).

Annual Emissions Inventory and the Annual Emissions Fee are submitted annually based upon actual emissions of previous calendar year and must be submitted on March 31 and July 1, respectively.

Pre-Application Meeting / Assistance* request is an optional service provided by the Air Quality Bureau to review applications and provide in depth hands-on help with an application.

- 1. Company/Facility Name:** Enter the official company name and/or plant designation for the facility submitting the Title V application. If the official company name has changed since the last submittal please enter the new facility name in the box. The official facility name must be entered the same on every form submitted.
- 2. EIQ Number:** This is the number issued for the 1993 emission inventory questionnaire. This number must be entered on each form and worksheet submitted to DNR. Contact Weston Li at (515) 725-9580 if an EIQ number needs to be assigned.
- 3. Facility Number:** This number is a 7 digit number separated by hyphens (e.g. xx-xx-xxx). This number is provided to facilities by the DNR.

*There is an application fee for processing an initial or renewal application or a pre-application meeting / assistance request. See [Application Fee](#) in the Application Introduction for more information.

Facility Address: Enter the Facility Address, City and ZIP Code. The facility address is the physical location of the facility.

- 4. Permit Contact Name:** The permit contact is the person familiar with the operations of the plant and who should answer any questions regarding the permit application submitted for this particular facility.

Enter the permit contact's Title, Salutation, Phone Number, Email, Mailing Address, City, State, and ZIP Code.

- 5. Billing Contact Name** (if different than permit contact information above): The billing contact is the person that will be processing the application fee invoice for the facility.

Also enter the Company Name, Phone Number, Email, Mailing Address, City, State, and ZIP Code of the billing contact if one is identified.

- 6. Parent Company/Owner Name:** Complete this block if the facility is owned by a parent company or an owner either wholly or in part.

Enter the Parent Company Contact/Agent, the contact/agent's Title, Salutation, Phone Number, Email, Mailing Address, City, State, and ZIP Code if one is identified.

- 7. Number of Employees:** Facility Total is the number of full time and equivalent number of part time individuals employed at the facility. Two part-time workers that are employed 20 hours per week are equivalent to one full time worker. Company Total is the total number of full time employees that the company employs throughout Iowa.
- 8. Principal Activity:** Provide the Standard Industrial Classification (SIC) code and the North American Industrial Classification System (NAICS) code and the activity descriptions for the facility. These codes are a compilation by the federal government of businesses by type of activity. SIC codes are intended to cover the entire field of economic activity while NAISC codes are specific to the activity performed at the facility.

Standard Industrial Classification (SIC): Enter the SIC code number that most appropriately describes the type of activity occurring at this facility and a corresponding written description of the activity. The SIC is a four digit number used to identify industries. The first two digits are the "major group" of a facility. For example, major group 20 is "Food and Kindred Products." The last two digits of the SIC code identify the specific type of facility. "Food and Kindred Products" that have 43 as the last two digits of their SIC code are classified "Cereal Breakfast Foods manufacturing (SIC code 2043)".

SIC codes and can be found at the OSHA website:
http://www.osha.gov/pls/imis/sic_manual.html.

There are times when a source has different major activities and SIC codes. In that case, use the SIC code that is the main one as a Principal Activity and the other SIC code as a Secondary Activity for the facilities operations. For example: a facility manufactures and prints on cardboard boxes. The primary SIC code is 2653, Corrugated and Solid Fiber Boxes. Since the company also prints on the boxes, the secondary SIC code is 2754, Commercial Printing, Gravure.

North American Industrial Classification System (NAICS): Enter the NAICS code number that most appropriately describes the type of activity occurring at this facility and a corresponding written description of the activity. NAICS is a two- through six-digit hierarchical classification system, offering five levels of detail. Each digit in the code is part of a series of progressively narrower categories. The first two digits designate the economic sector, the third digit designates the subsector, the fourth digit designates the industry group, the fifth digit designates the NAICS industry, and the sixth digit designates the national industry.

NAICS codes for facilities can be found at the US Census Bureau's website:
<https://www.census.gov/eos/www/naics/>

- 9. Secondary Activities:** If the facility has more than one major activity, provide the additional information here. Enter the SIC and NAICS codes and written descriptions of any secondary activities that may be occurring at the facility (see discussion of secondary activities in #8 above).
- 10. Responsible Official:** Enter requested information of the person designated for taking responsibility for the truth, accuracy, and completeness of the Title V Permit Application. The responsible official must meet the definition in the rules 567 IAC 22.100.

Application Contents

Check the boxes to indicate which forms are included with this submittal. Not all forms will be required for each submittal. Most of the modification applications will need only a limited number of forms.

Actual Emissions Data are required to be included in an initial or renewal application. To incorporate by reference an emission inventory submitted earlier, choose Option 1 indicating that the most recent EIQ submitted should be incorporated into the TV application. If there is no earlier EIQ submitted, the facility must choose Option 2 and submit Forms 4.0 and 5.0 and related calculations.

Statement of Certification of Compliance and Certification of Truth, Accuracy and Completeness

The rules cited on the form and in the Act require that a responsible company official certifies the truth, accuracy and completeness of the application and the compliance status of the facility during the reporting year.

The Statement of Certification of Compliance and Certification of Truth, Accuracy and Completeness must be signed by the responsible company official designated on box #10 above and must meet the definition in 567 IAC 22.100.

WARNING: Significant enforcement authority is provided in the Clean Air Act Amendments of 1990 for sources or officials (see definition of responsible official in 567 IAC 22.100) who knowingly misrepresent the emissions or conditions at their facility.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS

FORM 1.2 Schematic - Process Flow Diagram

This is a required form for all Title V facilities.

Facilities can choose to use this form or provide their own diagrams for each process. Facility diagrams must include facility name, EIQ number, and page number on each diagram. When submitting a facility's own diagrams a single Form 1.2 must be provided with sections 1 and 2 completed as a cover form.

Facilities can create and provide their own diagrams

Form 1.2 - page ___ of ___: Enter the individual page number of total page numbers. As an example, page 2 of 14.

- 1. Company/Facility Name:** Enter the company name as it appears on Form 1.0.
- 2. EIQ Number:** Enter the EIQ number assigned to the facility by the DNR.
- 3. (See examples on Form 1.2)** Diagrams need only show the path of flow of exhausts, throughputs and materials through emission units, control equipment, monitoring equipment and emission points.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS

FORM 1.3 Insignificant Activities - Potential Emissions (567 IAC 22.103)

Before completing Form 1.3 please review the rule relating to Insignificant Activities (567 IAC 22.103). Form 1.3 is used to designate emission units as insignificant activities under 567 IAC 22.103. Activities listed in 567 IAC 22.103 are qualified to be insignificant activities unless they are needed to determine the applicability of or impose any regulatory requirements.

Insignificant activities listed in 567 IAC 22.103(1) do not need to be listed in the Title V Operating Permit application.

Insignificant activities listed in 567 IAC 22.103(2) must be included in the application but are insignificant based on the emission potentials and the categories of emission units.

In general, a unit subject to a NSPS or NESHAP standard or permitted by a construction permit cannot be an insignificant unit. Engines subject to NESHAP subpart ZZZZ and/or NSPS subparts IIII and/or JJJJ and boilers subject to NESHAP subparts DDDDD or JJJJJJ are not qualified to be insignificant units. These units must be considered significant emission points and all forms (including Part 2 Engine/Boiler forms) must be submitted for these engines and boilers.

List all insignificant activities (emission units) required to be reported on the application under 567 IAC 22.103.

- Activities may qualify as insignificant if not needed to determine the applicability of or impose any regulatory requirement. An emission unit that is only subject to the general emission limitations in 567 IAC 23.3 can still qualify as an insignificant activity if it meets the criteria in 567 IAC 22.103.
- Emissions from each emission unit may not exceed the levels specified in 22.103(2).

Form 1.3 is available as a spreadsheet.

Form 1.3 - page ___ of ___: Enter the individual page number of total page numbers. As an example, page 2 of 14.

- 1. Company/Facility Name:** Enter the company name as it appears on Form 1.0.
- 2. EIQ Number:** Enter the EIQ number assigned to the facility by the DNR.
- 3. Emission Unit Number:** Enter the identification number for each insignificant emission unit. An emission unit must be identified consistently on all Title V forms. An emission unit is the specific process that generates air pollution emissions, e.g. storage tank, boiler, etc.
- 4. Emission Unit Description:** Provide a written description of the insignificant emission unit (process) for which the facility is claiming designation as an insignificant activity.
- 5. - 15. Pollutant categories:** For each emission unit listed in box 3, enter in the appropriate box the potential emissions in pounds per year of each air contaminant emitted. Remember that potential emissions are calculated based upon the emission unit operating at design capacity 8760 hours per year.

16. Totals this Page: Enter the total potential emissions in pounds per year of each air contaminant from all insignificant activities on this page. (Page totals will be automatically calculated if using the spreadsheet version)

17. Facility Totals (Tons/Year): On the first Form 1.3 (if multiple Forms 1.3 are needed) enter the Facility Total emissions (tons/year) for the plant by adding up the individual Form 1.3 page totals. It is not necessary to enter facility totals on all pages. (Facility totals will be automatically calculated if using the spreadsheet version)

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS

FORM 1.4 Potential Toxic Emissions - Significant Activities

This form is required for all Title V facilities.

Form 1.4 is used to report facility-wide potential emissions of hazardous air pollutants (toxics) and additional air pollutants that are not reported on Form 1.5 Potential Emissions for Criteria Pollutants. Form 1.4 summarizes the individual form 3.0's Emission Unit Description-Potential Emissions (back page). The term additional regulated air pollutants refers to pollutants that are neither criterial pollutants nor hazardous air pollutants but are federally required to be reported. Additional Regulated Air Pollutants include, but are not limited to, fluorides, reduced sulfur compounds, sulfur acid mists, and hydrogen sulfide. These pollutants are also referred to as "New Source Review (NSR) pollutants."

Form 1.4 is available as a spreadsheet.

Form 1.4 - page ___ of ___: Enter the individual page number of total page numbers. As an example, page 2 of 14.

- 1. Company/Facility Name:** Enter the company name as it appears on Form 1.0.
- 2. EIQ Number:** Enter the EIQ number assigned to the facility by the DNR.
- 3. CAS No.:** Enter the Chemical Abstract (CAS) number of the hazardous air pollutant and additional regulated pollutants listed in column 4. Do not include pollutants that are reported on Form 1.5
- 4. Pollutant Name:** Enter the name of the hazardous air pollutant and additional regulated pollutants that corresponds with the CAS number listed in column 3. The hazardous air pollutants of concern under the Title V permitting program are the 187 chemicals or chemical families listed in the rules and the Clean Air Act Amendments of 1990.

See Appendix A for a list of hazardous air pollutants.
- 5. Potential Emissions (Tons/Year):** Summarize the plant-wide Potential Emissions in tons per year of each Hazardous Air Pollutant and additional regulated pollutants identified in box 4.
- 6. Totals this Page (Toxics Only):** Enter, in tons per year, the total Hazardous Air Pollutant potential emissions for this page. Exclude non-Toxics pollutants from Box 6. (Page totals will be automatically calculated if using the spreadsheet version)
- 7. Facility Totals - Potential Emissions (Toxics Only):** On the first Form 1.4 (if multiple Forms 1.4 are needed) enter the total toxic potential emissions for the plant by adding up the individual Form 1.4 page totals. It is not necessary to enter facility totals on all pages. (Facility totals will be automatically calculated if using the spreadsheet version)

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS

FORM 1.5 Potential Emissions – Significant Activities

This form is required for all Title V facilities.

Form 1.5 is used to report facility-wide potential emissions of Criteria Pollutants in tons/year. This form summarizes the individual form 3.0's Emission Unit Description-Potential Emissions (front page).

Form 1.5 - page ___ of ___: Enter the individual page number of total page numbers. As an example, page 2 of 14.

1. Company/Facility Name: Enter the company name as it appears on Form 1.0.

2. EIQ Number: Enter the EIQ number assigned to the facility by the DNR.

3. & 4. Summary of Criteria and other pollutant Potential Emissions: Box #3 lists the Criteria Pollutants and other pollutants required to be reported for the entire facility. Enter the facility wide total potential emissions in Tons per Year for each pollutant in box #4.

5. Indicate which conditions subject this facility to obtaining an Iowa Title V Operating Permit: Check the reason(s) that the facility is required to submit this Title V Operating Permit Application.

Please note that Total PM and Ammonia are not used in determining Title V applicability.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS

FORM CA-01 Calculations

Calculation worksheets are provided to document calculated values that are entered on individual forms throughout this permit application. Duplicate this form as needed and attach it to the associated form. This form may be substituted with other documents, such as spreadsheets, as long as all the required information is included.

All calculations, the parameters used in the calculations, and a description of any assumptions used in making calculations must be clearly documented so that DNR staff can follow the calculations.

A copy of the completed permit application, including all calculations sheets, should be retained at the facility.

Form CA-01 - page ___ of ___: Enter the individual page number of total page numbers. As an example, page 2 of 14.

- 1. Company/Facility Name:** Enter the company/facility name as it appears on Form 1.0.
- 2. EIQ Number:** Enter the EIQ number assigned to the facility by the DNR.
- 3. Emission Point Number:** Enter the identification number of the emission point associated with the calculations document on this form. An emission point must be identified consistently on all Title V forms. Enter "Facility-Wide" if this form provides supporting documentation for Form 1.4 or Form 1.5.
- 4. Emission Unit (Process) Number:** Enter the identification number of the emission unit associated with the calculations documented on this form. An emission unit must be identified consistently on all Title V forms. Enter "Facility-Wide" if this form provides supporting documentation for Form 1.4 or Form 1.5.
- 5. Emission Unit (Process) Description or (SCC) Number:** Provide a written description or the SCC number which describes the emission unit associated with the calculations documented on this form. Enter "N/A" if this form provides supporting documentation for Form 1.4 or Form 1.5. For a list of valid point-source SCC numbers, please refer to the Source Classification Code (SCC) List at <http://www.iowadnr.gov/Environmental-Protection/Air-Quality/Emissions-Inventory/Emissions-Estimate-Tools>.
- 6. Calculations are provided in support of information reported on Form ___, page ___:** Identify the Form number and page number of the form for which this calculation sheet provides supporting documentation. For example Form 3.0, page 17.
- 7. Emission Calculations:** Enter calculations in this space. This documentation will allow DNR staff to follow how values were calculated. Please provide legible calculations.

If the source of an emission factor is not a widely available source (such as WebFIRE, AP-42, etc.), a copy of the document must be submitted with the application. If emissions are calculated using program models (such as TANKS, LandGEM, etc.), the program outputs must be submitted with the application.

If the source of an emission factor is a stack test, please indicate the test date and the test method used and include a copy of the report summary. Do not submit the entire stack test report. The most recent

and approved stack test should be used. If more than one DNR-approved stack test was conducted for an emission point during the emissions inventory year, emissions should be estimated using each DNR-approved stack test result along with the throughput or operating data for the period of time after each stack test date(s). Example emission calculations using multiple stack tests are available at the DNR website http://www.iowadnr.gov/portals/idnr/uploads/air/insidednr/operpermit/seg_emiss_method.pdf.

In case of a PM/PM₁₀/PM_{2.5} test with less than the minimum catch (or detection limit) of 2.54 mg, 1.44 mg, and 1.35 mg, respectively, the emissions calculation should be based on the minimum catch. Please note that a PM/PM₁₀/PM_{2.5} test should be designed to catch a minimum of 3 times the detection limits. Similarly, for tests of other pollutants, the emissions calculation should be based on the minimum/detect level if the stack test reports less than the minimum/detect level of the applicable test method. Facilities have the option of testing for long enough to capture the minimum sample weight required by the test method.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS

FORM 2.0 Emission Point Information

This form is required for all Title V facilities.

Form 2.0 Emission point information identifies the physical characteristics and location of each emission point and the associations among emission points, emission units, control equipment, and monitoring equipment.

Form 2.0 - page ___ of ___: Enter the individual page number of total page numbers. As an example, page 2 of 14.

- 1. Company/Facility Name:** Enter the company name as it appears on Form 1.0.
- 2. EIQ Number:** Enter the EIQ number assigned to the facility by the DNR.
- 3. Emission Point Number:** Enter the identification number of the emission point. An emission point must be identified consistently on all Title V forms. An emission point is where emissions vent to the atmosphere. Emission points can include stacks, horizontal vents, building ventilation vents, and fugitive sources such as material storage piles (coal, aggregate, etc.) and volatile liquid storage tanks.

Facilities with 5 or more identical units (must have the same stack characteristics and limits) may provide information requested on this form in table format.
- 4. Emission Point Description:** Provide a brief description of the emission point, i.e. boiler #1 & 2 stack, paint booth #7 wall vent, etc.
- 5. Emergency Bypass Stack?:** Check the appropriate box. Check Yes if this emission point is used as an emergency stack for other emission points and identify the emission points that use this stack as an emergency stack.
- 6. Emission Point (EP) Type:** Check the box that best describes the emission point.
- 7. Stack Shape and Dimensions:** Provide interior dimensions at the exit point for this emission point.
- 8. Stack Height Above Ground:** Enter the height above the ground of the stack's exit point.
- 9. Stack Location UTM Coordinates:** Enter the Universal Transverse Mercator coordinates (UTM) of the stack in meters. The Easting value should be within the range of 200,000 to 1,250,000 meters and the Northing value should be between 4,450,000 to 4,830,000 meters for locations in Iowa. Use the check boxes to designate whether the facility is in UTM Zone 14 or 15. Use the check boxes to designate whether the UTM coordinates are based on North American Datum of 1927 (NAD 27) or North American Datum of 1983 (NAD 83). For a general discussion of the Universal Transverse Mercator coordinate (UTM) system or on the North American Datum of 1927 (NAD 27) and North American Datum of 1983 (NAD 83) visit the National Geodetic Survey (NGS) at the National Oceanic & Atmospheric Administration (NOAA) website and review the FAQ section (<https://www.ngs.noaa.gov/faq.shtml>). A NAD 27 to 83 or NAD 83 to 27 convertor may be found at <https://www.ngs.noaa.gov/TOOLS/Nadcon/Nadcon.shtml>. A UTM convertor for a known latitude and longitude may be found at <http://www.ngs.noaa.gov/TOOLS/utm.html>. Note: If a previous application

had the UTM locator and the distance from that point to the stacks, that information could be used to calculate the values for the updated Form 2.0 (12/2007 and later). Convert the feet to meters from the old Form 2.0 (12/1/06 and older) and add distances that are North and East of the UTM, and subtract distances that are South and West of the UTM.

- 10. Rain Cap or Obstruction:** Check the appropriate box. If Yes, specify the type of obstruction, i.e. elbow, rain cap.
- 11. Exhaust Stream Information:** Enter the flow rate and temperature of the exhaust stream. Please indicate the units of the flow rate by checking the acfm (actual cubic feet per minute) or scfm (standard cubic feet per minute) boxes.
- 12. Bypass Stacks Associated with this Emission Point:** If there is an emergency bypass stack through which air contaminants from this emission point may be emitted, enter the bypass stack emission point number and description.
- 13. List of Emission Units Venting through this Emission Point:** List emission unit numbers for all emission units venting through this emission point.
- 14. List of Control Equipment Associated with this Emission Point:**
List control equipment numbers for all air pollution control equipment serving the emission units vented through this emission point.
- 15. List of Monitoring Equipment Associated with this Emission Point:** List monitoring equipment numbers for all continuous emission monitoring equipment associated with the emission units vented through this emission point.

For each piece of control equipment a Form CE-01 must also be completed.

For each piece of monitoring equipment a Form ME-01 also must be completed.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS

FORM 3.0 Emission Unit Description – Potential Emissions

This form is required for all Title V facilities.

Form 3.0 is used to calculate potential emissions for each emission unit. A separate Form 3.0 must be completed for each emission unit at the facility.

An emission unit is the specific process that generates the air pollution emissions. An example of an emission unit is a boiler combusting coal (coal is the throughput). However, if an emission unit has two throughputs - such as a grain dryer, there are 2 throughputs with different emissions:

Throughput 1: natural gas combustion - NO_x, CO, etc. emissions

Throughput 2: grain - produces particulate emissions

This example process should be listed as two (2) emission units (one for each throughput) each assigned a separate emission unit number, with two (2) Form 3.0s completed (one for each emission unit).

Potential emissions must be calculated based upon the maximum design rate of the emission unit and 8760 hours of operation per year unless the unit is limited in either process rate or hours of operation by a federally enforceable permit or order.

If proposing a new process limitation for this unit see [Appendix G](#) for required documentation. Form 3.0 is no longer used for proposing new process limitations.

Form 3.0 - page ___ of ___: Enter the individual page number of total page numbers. As an example, page 2 of 14.

- 1. Company/Facility Name:** Enter the company name as it appears on Form 1.0.
- 2. EIQ Number:** Enter the EIQ number assigned to the facility by the DNR.
- 3. Emission Point Number:** Enter the identification number of the emission point associated with this emission unit. An emission point must be identified consistently on all Title V forms.

Facilities with 5 or more identical units (must have the same stack characteristics and limits) may provide information requested on this form in table format.
- 4. Emission Point Description:** Provide a brief description of the emission point, i.e. boiler #1 & 2 stack, paint booth #7 wall vent, fugitive, etc.
- 5. Emission Unit Number:** Enter the identification number for each emission unit. An emission unit number must be identified consistently on all Title V forms. An emission unit is the specific process that generates air pollution emissions, e.g. a boiler, storage tank, etc.
- 6. SCC Number:** Enter the Source Classification Code (SCC) that identifies the type of process or activity occurring at this emission unit. The SCC number corresponds to the Description of Process (Box 7) and specific "emission factor units" (lb/ton, lb/gal, etc.). For a list of valid point-source SCC numbers, please refer to the Source Classification Code (SCC) List at <http://www.iowadnr.gov/InsideDNR/RegulatoryAir/EmissionsInventory/EmissionsEstimateTools.aspx>.

- 7. Description of Process:** Provide a written description of the process as defined by the SCC number entered in box 6 above. If a SCC number and corresponding description is not available for this specific process please provide a description of the process.
- 8. Name of Manufacturer:** Enter the name of the manufacturer of this emission unit (process equipment).
- 9. Date of Construction:** Enter the date on which construction was commenced for this emission unit. For the purposes of this question commenced construction means the date that an owner or operator has undertaken a continuous program of construction or modification or that the owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification. For the grandfathered units that were built prior to 1970 and the exact date is not unknown, it is acceptable to enter Pre-1970.
- 10. Model Name - Model Number - Serial Number:** Enter the model name, number and serial number of this emission unit.
- 11. Date of Installation:** Enter the date of the actual installation of the emission unit equipment. In many cases this will be the same date as the date of construction.
- 12. Date of Modification:** If this emission unit has been modified or reconstructed since it was originally installed, please enter the date of the last modification/reconstruction. A modification is a physical or operational change that can increase the emissions of a regulated air pollutant. A reconstruction is the replacement of components on an existing unit to such an extent that the cost of the replacement components exceeds 50% of the fixed capital cost of a new unit. See 40 CFR 60.14, 60.15 and 63.2 for complete definitions. A qualified modification or reconstruction may affect applicability determination of NSPS/NEASHP rules.
- 13. Raw Material - OR - Fuels Used:** Enter the raw material used in this emission unit (process). For combustion sources enter the fuel used. If multiple raw materials or fuels are used at this emission unit list the worst-case fuel or raw material and the pollutant(s) for which it is worst case. For example:
- Fuels (throughput)
 - Coal - SO₂, PM & PM₁₀
 - Natural Gas - NO_x
 - Raw Materials (throughput)
 - Paint #1 - VOC, HAPs, and Lead
 - Paint #2 - PM, PM₁₀
- 14. Federally Enforceable Operating Limit:** If this emission unit is subject to any operating limitation, such as limitations on hours of operation, raw materials, or amount of fuel combusted, etc., enter this limitation here. Enforceable limitations are usually established in the construction/operating permit or in an enforcement order.
- 15. Permit or Rule Establishing Operating Limit:** Enter the source of the operating limitation specified in box 14. The source may be a construction permit, an operating permit, an administrative or court order. List the permit number or the order number here and attach form CA-01, if necessary, to detail the parameters of the limit.

- 16. Maximum Hourly Design Rate:** Enter the maximum hourly production rate for this emission unit. For combustion units this is the maximum heat input capacity (in millions of Btu per hour) for the equipment using the fuel specified in box 13.
- 17. Air Pollution Control Equipment (CE) Number:** List control equipment numbers for all air pollution control equipment associated with this emission unit.
- 18. Monitoring Equipment:** List monitoring equipment numbers for all continuous emission monitoring equipment associated with this emission unit.
- 19. Air Pollutant:** Enter on Page 1 of Form 3.0 the potential emissions for pollutants PM_{2.5}, PM₁₀, Total PM, SO₂, NO_x, VOC, CO, Lead, Ozone, and Ammonia. Enter on Page 2 of Form 3.0 the potential emissions for Hazardous Air Pollutants (HAP's) and additional regulated air pollutants (ex. fluorides, etc.) Please indicate the identity of the pollutant by entering the CAS number and name of the pollutant.
- Multiple Page 2's can be submitted for facilities with many HAPs and additional regulated air pollutants.
- 20. Emission Factor:** Enter the numerical emission factor (in pounds per unit) being used to calculate the potential emissions from this unit. As noted at the bottom of the form, the most recent emission factors can be obtained for some processes from EPA documents or calculated from the most recent and approved stack test data, worksheets, or continuous emission monitoring data. See the instructions for Form CA-01 (page 17) for additional discussion of supporting documents and the use of stack test results.
- 21. Emission Factor Units:** Enter the emission factor units that correspond to the numerical emission factor utilized in box 20. Typical emission factor units are expressed in pounds of pollutant emitted per unit of production or unit of fuel combusted. Examples are pounds/ton, pounds/gallon, pounds/million cubic feet, etc. Use the allowable limit to calculate potential emissions when applicable.
- 22. Source of Emission Factor:** Indicate the source of the emission factor used in box 20. See the bottom of Form 3.0 for typical sources of emission factors.
- 23. Ash or Sulfur %:** For combustion sources only, enter ash content (%) in the fuel in the PM_{2.5}, PM₁₀, and PM (total particulate matter) rows; enter sulfur content (%) in the fuel in the SO₂ row.
- 24. Potential Hourly Uncontrolled Emissions (Lbs/Hr):** Calculate the potential uncontrolled emissions on an hourly basis and enter the value in pounds per hour. To calculate potential uncontrolled emissions, multiply the Maximum Hourly Design Rate (box 16) by the Emission Factor (box 20). In order for this calculation to work correctly the emission factor units must correspond to the units used in box 16.
- Example: A spreader stoker boiler burning 3 tons per hour of subbituminous coal times the emission factor of 60 pounds of PM per ton of coal burned equals 180 pounds per hour of PM emitted uncontrolled.
- 25. Combined Control Efficiency %:** The combined control efficiency is the product of the control efficiency multiplied by the capture efficiency. See the instructions for Form CE-01 (Page 30) for additional information on calculating the combined control efficiency. If only one emission control device is used enter the percent control efficiency. Be sure to enter the control efficiency in the box

corresponding to the air pollutant for which that efficiency is appropriate. For example, a device may be 90% efficient in removing PM from the air stream but only 70% efficient in removing PM₁₀.

When two devices are used to remove a pollutant from the same emission point the control efficiencies must be combined and the combined control efficiency is calculated using the following formula:

$$\text{Control Efficiency} = CE_1 + CE_2 - [(CE_1 \times CE_2) / 100]$$

where CE_1 = Control Efficiency for First Device
 CE_2 = Control Efficiency for Second Device

Example: If one device has a control efficiency of 50% for PM₁₀ and a second device has a control efficiency of 80% for PM₁₀, the calculation of combined control efficiency is as follows:

$$\begin{aligned}\text{Control Efficiency} &= 50 + 80 - [(50 \times 80) / 100] \\ &= 90\%\end{aligned}$$

Thus, the combined control efficiency for PM₁₀ at this emission point would be 90%. This formula only works for combining two control efficiencies. When combining more than two control efficiencies use the following formula:

$$\text{Control Efficiency} = 1 - (1 - CE_1) \times (1 - CE_2) \times \dots \times (1 - CE_n)$$

Where CE_1 , CE_2 , ..., CE_n , are the control efficiencies in decimal and n is the total number of control equipment.

Note that the control efficiency of a secondary piece of emission control equipment is dependent upon particle size, grain loading to the device, air flows, etc. Therefore, caution should be used when assigning control efficiency to multiple control devices.

26. Potential Hourly Controlled Emissions (Lb/Hr): Calculate the hourly controlled emissions by applying the Combined Control Efficiency (box 25) to the Potential Hourly Uncontrolled Emissions (box 24). Enter the value in pounds per hour.

27. Potential Annual Controlled Emissions (Tons/Yr): Calculate the annual potential controlled emissions by multiplying the Potential Hourly Controlled Emissions (box 26) by 8760 hours/year and converting pounds/year to tons/year.

Unless the emission unit is subject to enforceable limitations on hours of operation (box 15), Potential Emissions are based on 8760 hours per year.

Example 1: Potential emissions calculations for PM:

Throughput (flow rate): 35,365 scfm
PM Limit: 0.01 gr based on 567 IAC 23.4(13)

$$\begin{aligned}PM_{\text{potential}} &= \frac{35,365 \text{ dscf}}{\text{min}} * \frac{0.01 \text{ gr}}{\text{dscf}} * \frac{1 \text{ lb}}{7,000 \text{ gr}} * \frac{60 \text{ min}}{\text{hr}} = \frac{3.03 \text{ lb}}{\text{hr}} \\ &= \frac{3.03 \text{ lb}}{\text{hr}} * \frac{8,760 \text{ hr}}{\text{year}} * \frac{1 \text{ ton}}{2,000 \text{ lb}} = \frac{13.27 \text{ ton}}{\text{year}}\end{aligned}$$

Example 2: Potential and Allowable Emissions from a Coal Fired Boiler

Rated Capacity = 3081 MMBtu / hr = 155.6 tons of coal / hr

Allowable standards:

PM allowable = 0.3 lb / MMBtu based on 567 IAC 23.3(2)"b"

SO₂ allowable = 5.0 lb / MMBtu based on 567 IAC 23.3(3)"a"(2)

NO_x allowable = 0.5 lb / MMBtu based on 40 CFR 76.5(a)(2)

AP42 Emission Factors:

VOC potential: 0.07 lb/ton

CO potential: 0.6 lb/ton

Allowable emissions are calculated based on emission limits that are federally enforceable and are often considered potential emissions.

$$\begin{aligned} PM_{allowable} &= \left(\frac{3,081 \text{ MMBtu}}{\text{hr}} \right) * \left(\frac{0.3 \text{ lb}}{\text{MMBtu}} \right) * \left(\frac{8,760 \text{ hr}}{\text{yr}} \right) * \left(\frac{1 \text{ ton}}{2,000 \text{ lb}} \right) \\ &= \frac{4,048.43 \text{ ton}}{\text{yr}} \end{aligned}$$

$$\begin{aligned} SO_{2allowable} &= \left(\frac{3,081 \text{ MMBtu}}{\text{hr}} \right) * \left(\frac{5.0 \text{ lb}}{\text{MMBtu}} \right) * \left(\frac{8,760 \text{ hr}}{\text{yr}} \right) * \left(\frac{1 \text{ ton}}{2,000 \text{ lb}} \right) \\ &= \frac{67,473.90 \text{ ton}}{\text{yr}} \end{aligned}$$

$$\begin{aligned} NO_{xallowable} &= \left(\frac{3,081 \text{ MMBtu}}{\text{hr}} \right) * \left(\frac{0.5 \text{ lb}}{\text{MMBtu}} \right) * \left(\frac{8,760 \text{ hr}}{\text{yr}} \right) * \left(\frac{1 \text{ ton}}{2,000 \text{ lb}} \right) \\ &= \frac{6,747.39 \text{ ton}}{\text{year}} \end{aligned}$$

$$\begin{aligned} VOC_{potential} &= \left(\frac{155.6 \text{ ton}}{\text{hr}} \right) * \left(\frac{0.07 \text{ lb}}{\text{ton}} \right) * \left(\frac{8,760 \text{ hr}}{\text{yr}} \right) * \left(\frac{1 \text{ ton}}{2,000 \text{ lb}} \right) \\ &= \frac{47.71 \text{ ton}}{\text{yr}} \end{aligned}$$

$$\begin{aligned} CO_{potential} &= \left(\frac{155.6 \text{ ton}}{\text{hr}} \right) * \left(\frac{0.6 \text{ lb}}{\text{ton}} \right) * \left(\frac{8,760 \text{ hr}}{\text{yr}} \right) * \left(\frac{1 \text{ ton}}{2,000 \text{ lb}} \right) \\ &= \frac{408.92 \text{ ton}}{\text{yr}} \end{aligned}$$

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS

FORM 4.0 Unit Process – Actual Operations and Emissions

This form is required for all Title V facilities.

Form 4.0 provides the actual emissions during a calendar year for each emission unit process at the facility. A separate Form 4.0 must be completed for individual processes with different throughputs for each emission unit. For example, for a combustion source (i.e. natural gas burners) the raw material is the fuel combusted. If the combustion source is also a process unit (i.e., process dryer), separate Forms 4.0 must be completed for the fuel used and the raw material processed.

When submitting an application, a facility may choose to use the previously submitted emissions inventory as part of the application. Choose this option under Application Contents on Form 1.0, and Forms 4.0 and 5.0 will not be required to be included in the application.

Form 4.0 - page ____ of ____: Enter individual page number of total page numbers. As an example, page 2 of 14.

- 1. Company/Facility Name:** Enter the company name as it appears on Form 1.0.
- 2. EIQ Number:** Enter the EIQ number assigned to the facility by the DNR.
- 3. Emission Year:** Enter the calendar year for which actual emissions were calculated for this emission unit process. Usually this will be the previous year.
- 4. Emission Point Number:** Enter the identification number of the emission point associated with this emission unit. An emission point must be identified consistently on all Title V forms.
- 5. Emission Point Description:** Provide a brief description of the emission point, i.e. boiler #1 & 2 stack, paint booth #7 wall vent, fugitive, etc.
- 6. Emission Unit Number:** Enter the identification number of the emission unit. An emission unit must be identified consistently on all Title V forms.
- 7. SCC Number:** Enter the Source Classification Code Number (SCC) that identifies the type of process or activity occurring at this emission unit. The SCC number corresponds to the Description of Process (Box 8). For a list of valid point-source SCC numbers, please refer to the Source Classification Code (SCC) list at <http://www.iowadnr.gov/InsideDNR/RegulatoryAir/EmissionsInventory/EmissionsEstimateTools.aspx>.
- 8. Description of Process:** Provide a written description of the process as defined by the SCC number entered in box 7 above. If a SCC number and corresponding description is not available for this specific process, please provide a description of the process.
- 9. Annual Throughput:** Enter the total throughput during the emission year specified in box 3.
- 10. Throughput Unit of Measure:** Enter the units (tons, gallons, bushels, million cubic feet, etc.) of the raw material total specified in box 9. For a list of valid units, please refer to the Throughput Units of

Measure list at

<http://www.iowadnr.gov/InsideDNR/RegulatoryAir/EmissionsInventory/EmissionsEstimateTools.aspx>.

- 11. Throughput Type:** Check the appropriate type of throughput for the emission unit. The throughput could be (a) Input to a process (e.g. paints used in a booth), (b) Output from a process (e.g. ethanol loaded out to a truck), or (c) Existing static count (e.g. a storage pile.)
- 12. Throughput Material:** Identify the raw material utilized in this emission unit, such as coal, grain, paint, etc. For a list of valid throughput materials, please refer to the Throughput Material Types list at <http://www.iowadnr.gov/InsideDNR/RegulatoryAir/EmissionsInventory/EmissionsEstimateTools.aspx>.
- 13. Average Hours/Day:** Enter the average number of hours per day that the equipment or process (Emission Unit) was in operation. Since some processes are operated on a different daily schedule over the course of the year, enter the average hours per day the emission unit operated during the entire year specified in box 3.
- 14. Average Days/Week:** Enter the average days per week that the equipment or process (Emission Unit) was in operation. Since some processes are operated on a different weekly schedule over the course of the year, enter the average days per week that the emission unit operated during the entire year specified in box 3.
- 15. Average Weeks/Year:** Enter the average weeks per year that the equipment or process (Emission Unit) was in operation. Since some processes are operated on a different weekly schedule over the course of the year, enter the average week per year the emission unit operated during the entire year specified in box 3.
- 16. Actual Hours for Year:** Enter the total hours the emission unit was in operation for the calendar year specified in box 3.
- 17.- 20. Seasonal Operations:** Enter the percent of actual operations that occurred in each season – winter, spring, summer, and fall months.
- 21. Control Equipment (CE) Number and Control Equipment Description:** Enter control equipment numbers for all air pollution control equipment associated with this emission unit and provide a brief description of the control equipment.
- 22. Monitoring Equipment (ME) Number and Monitoring Equipment Description:** Enter monitoring equipment numbers for all air pollution monitoring equipment associated with this emission unit and provide a brief description of the monitoring equipment.
- 23. Air Pollutant:** Page 1 of Form 4.0 lists the pollutants PM_{2.5}, PM₁₀, Total PM, SO₂, NO_x, VOC, CO, Lead, Ozone, and Ammonia that are reported on this form.

Primary (sum of filterable and condensable) PM_{2.5}, PM₁₀, and PM emissions are reported on Forms 4.0 and 5.0. The DNR recognizes that some emission units may only be subject to filterable PM emission limits from federal regulations. The compliance demonstration method will remain the same in these instances. However, for emissions inventory purposes, DNR is required to report primary PM_{2.5} and PM₁₀ emissions to meet the National Emissions Inventory requirements.

Actual emission information for Hazardous Air Pollutants and additional regulated air pollutants (e.g. fluorides, etc.) should be entered on Page 2 of Form 4.0. Please indicate the identity of the pollutant by entering the CAS number and name of the pollutant. Duplicate this form if necessary. Please note that actual greenhouse gas (GHG) emissions do not need to be reported to DNR and should not be reported on Form 4.0.

24. Emission Factor: Enter the numerical emission factor (in pounds per unit) being used to calculate the actual emissions from this unit. Emission estimations should be based on, in the order of decreasing accuracy: continuous emission monitoring data, DNR-approved and site-specific stack test data, mass balance, or EPA approved emission factors. If none of these methods are available, an emission factor from a similar source with similar control equipment can be substituted, considering the characteristics of the material being processed or handled are similar.

The most recent emission factors can be obtained for some processes from EPA documents or calculated from the most recent and approved stack test data, worksheets, or continuous emission monitoring data. See the instructions for Form CA-01 (page 17) for additional discussion of supporting documents and the use of stack test results.

25. Emission Factor Units of Measure: Enter the emission factor units that correspond to the numerical emission factor utilized in box 24. Typical emission factor units are expressed in pounds of pollutant emitted per unit of production or unit of fuel combusted. Examples are pounds/ton, pounds/gallon, pounds/million cubic feet, etc.

26. Source of Emission Factor: Indicate the source of the emission factor used in box 24. See the bottom of Form 4.0 for typical sources of emission factors.

27. Ash or Sulfur %: For combustion sources only, enter ash content (%) in the fuel in the PM_{2.5}, PM₁₀, and PM (total particulate matter) rows; enter sulfur content (%) in the fuel in the SO₂ row.

28. Combined Control Efficiency %: The combined control efficiency is the product of the control efficiency multiplied by the capture efficiency. See the instructions for Form CE-01 (Page 30) for additional information on calculating the combined control efficiency. If only one emission control device is used enter the percent control efficiency. Be sure to enter the control efficiency in the box corresponding to the air pollutant for which that efficiency is appropriate. For example, a device may be 90% efficient in removing PM from the air stream but only 70% efficient in removing PM₁₀.

When two devices are used to remove a pollutant from the same emission point the control efficiencies must be combined and the combined control efficiency is calculated using the following formula:

$$\text{Control Efficiency} = CE_1 + CE_2 - [(CE_1 \times CE_2) / 100]$$

Where CE_1 = Control Efficiency for First Device

CE_2 = Control Efficiency for Second Device

Example: If one device has a control efficiency of 50% for PM₁₀ and a second device has a control efficiency of 80% for PM₁₀, the calculation of combined control efficiency is as follows:

$$\begin{aligned} \text{Control Efficiency} &= 50 + 80 - [(50 \times 80) / 100] \\ &= 130 - [4000 / 100] \\ &= 130 - [40] \end{aligned}$$

$$= 90\%$$

Thus, the combined control efficiency for PM₁₀ at this emission point would be 90%. This formula only works for combining two control efficiencies. When combining more than two control efficiencies use the following formula:

$$\text{Control Efficiency} = 1 - (1 - \text{CE}_1) \times (1 - \text{CE}_2) \times \dots \times (1 - \text{CE}_n)$$

Where CE₁, CE₂, ..., CE_n, are the control efficiencies in decimal and n is the total number of control equipment.

Note that the control efficiency of a secondary piece of emission control equipment is dependent upon particle size, grain loading to the device, air flows, etc. Therefore, caution should be used when assigning control efficiency to multiple control devices.

29. Actual Estimated Emissions (Tons): Enter the amount in tons per year of the pollutant emitted at the emission unit described. Emissions should be rounded to two decimal places. There are two possible methods.

Method 1: If the Sulfur or Ash percent is not given or the unit is not a combustion source, use the following formula:

$$\text{Actual Emissions} = \text{Actual Throughput} \times \text{Emission Factor} \times [(100 - \text{Percent Control Efficiency}) / 100] / 2000$$

Example 1: Assume the Actual Throughput is 30,000 tons of grain processed, the PM₁₀ emission factor is .91 pounds of PM₁₀ emitted per ton of grain processed and a PM₁₀ control device for this emission point has an efficiency of 90%. Using the formula above:

$$\begin{aligned} \text{Actual Emissions} &= 30,000 \times .91 \times [(100 - 90) / 100] / 2000 \\ &= 1.365 \text{ tons of PM-10 emitted per year} \end{aligned}$$

In this example, 1.37 tons would be entered into the PM₁₀ row of Box 29.

Example 2: If no control devices are used, the control efficiency is 0 and the equation would read: 30,000 x .91/2000 = 13.65 tons of PM₁₀ emitted per year.

In this example, 13.65 tons would be entered into the PM₁₀ row of Box 29.

Method 2: If the Sulfur or Ash percent is greater than 0, the following formula must be used:

$$\text{Actual Emissions} = \text{Actual Throughput} \times \text{Emission Factor} \times \% \text{ Ash or Sulfur from fuel analysis} \times [(100 - \text{Percent Control Efficiency}) / 100] / 2000.$$

Example: Assume the Actual Throughput is 10,000 tons of fuel burned, the SO₂ emission factor is 30 pounds of SO₂ emitted per percent of sulfur in the fuel burned, the Sulfur content of the fuel is 1.7% and the SO₂ control device has an efficiency of 50%. Using the formula above:

$$\begin{aligned} \text{Actual Emissions} &= 10,000 \times 30 \times 1.7 \times [(100 - 50) / 100] / 2000 \\ &= 127.50 \text{ tons of SO}_2 \text{ emitted per year} \end{aligned}$$

In this example, 127.50 tons would be entered into the SO₂ row of Box 29.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS

FORM CE-01 Pollution Control Equipment Data Sheet

This form is required for each piece of air pollution control equipment at Title V facilities and provides detailed characteristics and capabilities of the control equipment.

Page ____ of ____: Enter individual page number of total page numbers. As an example, page 2 of 14.

- 1. Company Name:** Enter the company name as it appears on Form 1.0.
- 2. EIQ Number:** Enter the EIQ number assigned to the facility by the DNR.
- 3. Control Equipment Number:** Enter the identification number for each pollution control equipment. A pollution control equipment number must be identified consistently on all Title V forms.
- 4. Type of Pollution Control Equipment:** Describe the type of pollution control equipment being represented on this form. For example, pulse jet baghouse, venturi scrubber, etc.
- 5. Manufacturer:** List the name of the manufacturer of the pollution control equipment.
- 6. Model:** List the model of the pollution control equipment.
- 7. Serial Number:** Enter the Serial Number of the pollution control equipment.
- 8. Date Installed:** Enter the date the pollution control equipment was installed at the facility.
- 9. Does this equipment exhaust to the atmosphere?** Mark an appropriate box. Examples of sources that do not vent to the atmosphere are those that vent back into a building or to other processes or control devices.
- 10. Associated Emission Units:** List emission unit numbers for all emission units associated with this pollution control equipment.
- 11. Equipment Control Efficiency based on:** Check the box that describes the basis upon which the device's emission control efficiency was determined.

Stack tests may be used to quantify emissions in the application. Please include the test date and the test method used. If stack test data are used submit a copy of the report summary. Do not submit the entire stack test report.

- 12. Pollutant Controlled:** Specify the different air pollutants being controlled by this piece of pollution control equipment.
- 13. Capture Efficiency:** Enter the percent emission capture efficiency of this control device. For example, although a baghouse may be 99% efficient in controlling particulate emissions, the pickup hood at the process may be only 40% successful in capturing all of the air contaminants emitted by the process. Estimates of capture efficiency are acceptable if actual capture efficiency is unknown. Be aware that capture efficiencies may be different for different pollutants, i.e. PM₁₀ vs. PM. If a hood is not used and the system is a closed system, the capture efficiency can be assumed to be 100%.

14. Control Equipment Efficiency %: Pollution control efficiencies may be obtained from the manufacturer's design control efficiency. Other sources of pollution control equipment efficiency are the AP-42 control factors, or by calculating the efficiency from the tested inlet and outlet concentrations. If two or more control equipment are used to remove the same pollutant, refer to the instructions for Form 4.0 above to calculate the efficiency of the multiple control device system. For a list of acceptable control efficiencies, please refer to the Control Efficiency Table at www.iowadnr.gov/Environmental-Protection/Air-Quality/Operating-Permits/Title-V-Technical-Guidance.

15. Combined Control Efficiency %: The Combined Control Efficiency is the product of Capture Efficiency and Control Equipment Efficiency. The resulted combined control efficiency, with consideration given to capture efficiency, should be used in calculating the potential (Form 3.0, box #27) and the actual estimate emissions (Form 4.0, box #29).

Example: If the capture efficiency is 75% and control equipment efficiency is 90%, the combined control efficiency would be $0.75 \times 0.90 = 0.675$ or 67.5%.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS

FORM ME-01 Continuous Monitoring Systems

This form is required only if the facility has continuous emission monitors or operational parameter monitoring for compliance demonstration purposes.

Continuous Monitoring Systems (CMS) can be used to demonstrate compliance with some emission limits and requirements. If compliance is demonstrated with a Continuous Monitoring System(s) for any emission unit or stack/vent, this form must be completed for each Continuous Monitoring System at the facility. For example, a facility with a Continuous Monitoring System that monitors both NO_x and SO₂ only needs to fill one form for the monitor.

Form ME-01 page ___ of ___: Enter the individual page number of total page numbers. As an example, page 2 of 14.

- 1. Company/Facility Name:** Enter the company name as it appears on Form 1.0.
- 2. EIQ Number:** Enter the EIQ number assigned to the facility by the DNR.
- 3. Monitoring Equipment Number:** Enter the identification number for each monitoring equipment. A monitoring equipment number must be identified consistently on all Title V forms.
- 4. Name of Manufacturer:** List the manufacturer of this continuous emissions monitor.
- 5. Model Name-Model Number-Model Year:** Enter the Model name, number and year.
- 6. Date of Installation:** Enter the date the continuous monitoring system was installed at the facility.
- 7. Pollutant(s) / Parameter(s) Monitored by CMS:** Check all the boxes that apply to this monitor regarding the pollutants or operational parameters monitored by this CMS.
- 8. Emission Point Number:** List the emission point number for the emission point associated with this continuous monitoring system. In other words, identify where the emissions are vented after they are monitored by this CMS.
- 9. Emission Unit Numbers:** List emission unit numbers for all emission units that are monitored by this CMS.
- 10. Monitor Operations:** Complete one box for each type of parameter or pollutant identified in question 7. For example, if the CMS monitors both NO_x and SO₂, check two boxes, one for NO_x and one for SO₂.

For each pollutant or parameter monitored, indicate if a performance specification test (based on either 40 CFR 60 Appendix B or 40 CFR 75 Appendix A) has been conducted, the date the test was conducted, and if the test was considered passed.

If the CMS system monitors more than three (3) different pollutants and parameters, duplicate this form and list the rest of the pollutants and parameters on additional forms.

11. Primary Data Acquisition System (DAS) information: This section provides information about the information system used to collect the data.

12. Comments: This space is provided for facilities to attach any additional explanations or comments regarding this continuous monitoring system.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS

FORM 5.0 Title V Annual Emissions Summary/Emissions Fee

This form is required for all Title V facilities.

Form 5.0 is used to provide an annual summary of the actual emissions due March 31 of each year. It is also used to calculate the Title V annual emissions fees due July 1 of each year. Form 5.0 consists of two pages. Page 1 is used to report actual emissions of regulated air pollutants often referred to as criteria pollutants and for fee calculation. Page 2 is used to report the emissions of HAPs and additional regulated air pollutants not reported on page 1.

When submitting an application, a facility may choose to use the previously submitted emissions inventory as part of the application. Choose this option under Application Contents on Form 1.0, and Forms 4.0 and 5.0 will not be required to be included in the application.

For Initial Applications:

- Fees are required for the portion of the year that the facility was subject to the Title V program. For example, if an existing facility becomes subject to the Title V program on November 1, only pollutants emitted during November and December are subject to fees.
- If the initial application is submitted on or after July 1, any fees owed for the preceding year are due when the application is submitted.
- If the initial application is submitted prior to July 1, any fees owed for the preceding year are due by July 1.
- An initial application must include all of the Part 1 and Part 2 forms. In subsequent years, the emissions inventories and fee payments need only include the forms specified on Form 5.0.

General Instructions:

- Report emission values to the nearest hundredth of a ton. Emission values less than 0.005 tons do not need to be reported.
- If the facility did not emit a pollutant listed on page 1 of this form, enter "0.00".
- Include fugitive emissions, but do not include emissions from insignificant activities (567 IAC 22.103).
- If an error is discovered in the calculations, submit the necessary revised forms along with a cover letter explaining the error.
- When submitting annual emissions inventory, send two copies of Forms 1.0, 4.0, and 5.0 (three copies if the facility is located in Linn or Polk county) to the address below.
- When submitting annual emissions fee payment, send one copy of Forms 1.0 and 5.0 and checks made payable and send to:

Iowa Department of Natural Resources
Air Quality Bureau
7900 Hickman Rd Ste 1
Windsor Heights, IA 50324

Form Specific Instructions:

- Enter the Facility Name and EIQ Number as it appears on Form 1.0.
- Enter the emission year for which the facility is reporting.
- Check the appropriate submission type (a) or (b).

- **Total Emissions (tons):** Enter the total plant-wide emissions of each criteria pollutant and ammonia listed in the table. The totals should come directly from the values reported on Form 4.0 for each emission unit. The values listed in this column should not take into account any emissions fee cap. For example, if the facility emitted more than 4,000 tons of an individual air pollutant, enter the actual amount emitted in this column.
- **Emissions Subject to Fees (tons):** Enter the total plant-wide emissions of each criteria pollutant subject to fees. PM_{2.5}, total particulate matter (PM), carbon monoxide (CO), and ammonia (NH₃) emissions are not subject to fees. Please note that PM₁₀ emissions are subject to fees. Fees are only required on the first 4,000 tons of each air pollutant emitted. Therefore, if the facility emitted more than 4,000 tons of an individual pollutant, enter 4,000 tons in this column for that pollutant.
- **Criteria Pollutant Fee Subtotal (tons):** Add the values reported in the Emissions Subject to Fees column and list the total here. If the facility emitted HAPs and/or additional "regulated air pollutants" as defined in 567 IAC 22.100, report them on page 2. Instructions for completing page 2 are located on the form.
- **Emissions Fee Calculation:** Add the Criteria Pollutant Fee Subtotal and HAP and Additional Regulated Air Pollutant Fee Subtotal from page 2 (if applicable), and enter the sum in line labeled Emissions Subject to Fee TOTAL.
- **Annual Emissions Fee Payment:** Completion of this section of the form is only required when submitting the annual fee payment due by July 1. Enter the Emissions Subject to Fees TOTAL calculated above, as well as the Fee Rate. The EPC sets the Fee Rate each year. The facilities subject to emission fee requirement will be notified by mail (as well as by web posting and listserv) immediately after the fee rate is set. Multiply the Emissions Subject to Fee TOTAL by the Fee Rate to calculate the Fee Due.

Below is a list of fee rates set previously by the EPC:

| Title V Emissions Fee Rate | | | |
|----------------------------|-----------------------|---------------|-----------------------|
| Emission Year | Fee Rate (\$ per ton) | Emission Year | Fee Rate (\$ per ton) |
| 1993 | \$24.00 | 2006 | \$35.20 |
| 1994 | \$12.00 | 2007 | \$39.00 |
| 1995 | \$22.10 | 2008 | \$52.00 |
| 1996 | \$22.10 | 2009 | \$56.00 |
| 1997 | \$21.10 | 2010 | \$56.00 |
| 1998 | \$23.10 | 2011 | \$56.00 |
| 1999 | \$24.50 | 2012 | \$56.00 |
| 2000 | \$25.40 | 2013 | \$56.00 |
| 2001 | \$29.00 | 2014 | \$56.00 |
| 2002 | \$30.75 | 2015 | \$67.50 |
| 2003 | \$32.25 | 2016 | \$70.00 |
| 2004 | \$31.60 | 2017 | TBD |
| 2005 | \$32.75 | 2018 | TBD |

IOWA TITLE V OPERATING PERMIT APPLICATION INSTRUCTIONS PART 2 – Requirements and Compliance

Part 2 of the application is designed to assist in identifying applicable air quality requirements and the compliance status of a Title V facility.

Remember that Form 1.0 (Part 1) must be submitted with all Part 2 submissions.

- When filling in Part 2 forms, identify each applicable requirement and specify how each requirement is monitored, reported, or measured.
- After identifying each requirement, indicate whether the facility is in compliance with each requirement, and how the sources compliance status was determined.
- For a source that is not in compliance with a requirement, the source will propose a plan for coming into compliance and a schedule for measuring progress toward that goal.

Although the Air Quality Bureau has provided an outline of the major air quality requirements that a facility may be subject to, each facility is ultimately responsible for being aware of, and providing information to the DNR on all existing and new regulations, both state and federal, that must be incorporated into the Title V permit.

References to U.S. Code of Federal Regulations (CFR) and Iowa Administrative Code (IAC) rules and regulations that may apply to a Title V facility are incorporated into the Part 2 of the application. Below are some helpful links to ensure Part 2 of the application has incorporated the most recent regulations:

- **New Clean Air Act Regulations** are published in the **Federal Register**. Because regulations published in the Federal Register may become effective before being published in the Code of Federal Regulations, the Air Quality Bureau recommends that facilities utilize the EPA Website at www.epa.gov and the Federal Register at www.ecfr.gov to keep apprised of any new regulations.
- **Iowa Statutes regarding Air Quality** are published in the **Code of Iowa** at <http://www.legis.iowa.gov>.
- **New Iowa Administrative Rules** are published in the **Iowa Administrative Bulletin** at www.legis.iowa.gov/law/administrativeRules/bulletinSupplementListings. Regulations are incorporated into the Iowa Administrative Code periodically.

Prior to when a Title V is issued, the permit application must be supplemented if, due to construction, modification, or new regulatory requirement, the originally submitted application no longer accurately describes the operation or regulatory requirements of the facility.

After a Title V permit is issued, it is necessary to modify the permit if changes are made at a facility. Please refer to 567 IAC 22.110-113 for the application procedures to modify an existing Title V permit.

The following forms are required to be submitted in order to be considered a complete Part 2 of the Title V application.

- **Part 2 - General Facility Requirements** form
- **Part 2 - Emission Point Information** form to account for each significant emission unit located at the facility.
- **Part 2 - CAM Calculations** form: this form is required even if CAM is not applicable.

- Additional Part 2 forms may be required to be submitted as determined by the forms above.
 - Part 61 NESHAP Information
 - Boiler and Process Heater Information
 - Engine Information

General Facility Requirements

Answer each of the listed questions for the facility. Refer to the referenced appendices for specific information regarding each question. The General Facility Requirements form may direct the applicant to fill out the following additional Part 2 forms: Part 61 National Emission Standards for Hazardous Air Pollutants (NESHAP) Information, Boiler and Process Heater Information and the Engine Information form.

Part 61 NESHAP Information

After completing question (1)(g) on the General Facility Requirements form, if it is determined that the facility is subject to 40 CFR 61 NESHAP requirements, a Part 61 NESHAP Information form must be completed. The form is used to identify all of the applicable 40 CFR 61 NESHAP subparts that a facility is subject to. Follow the instructions and guidance on the form while completing Part 61 NESHAP Information form.

Boiler and Process Heater Information

After completing question (8)(a) on the General Facility Requirements form, if it is determined that the facility operates any boilers and process heaters, including those qualified as insignificant units, Boiler and Process Heater Information forms must be completed. The form is used to determine if those boilers and process heaters are subject to 40 CFR 63 subpart DDDDD. Follow the instructions and guidance on the form while completing Boiler and Process Heater Information form.

Engine Information

After completing question (9)(a) on the General Facility Requirements form, if it is determined that the facility operates any engines, including those qualified as insignificant units, Engine Information forms must be completed. The form is used to determine if those engines are subject to 40 CFR 63 subpart ZZZZ, 40 CFR 60 subparts IIII and JJJJ. Follow the instructions and guidance on the form while completing Engine Information form.

Emission Point Information

This form provides an outline of the applicable requirements for each emission point present at the facility. A separate form shall be created for each emission point located at the facility. If the current Title V permit for the facility grouped similar/identical emission points into a tabular format, the applicant may choose to use the same format in this form. Also, if there are new significant emission units or other emission units in the permit that are similar/identical or have similar requirements, these units can also be combined into a tabular format in the Part 2 forms.

If this application is associated with a renewal permit application, the applicant can use the current Title V permit to assist with the completion of these forms.

Facilities with 5 or more identical units (must have the same stack characteristics and limits) may provide information requested on this form in table format.

The information requested in this form can be found in the DNR issued construction permits, PSD permits (DNR or EPA issued), Iowa Administrative Code, Federal requirements (NSPS, NESHAP, etc.), current Title V permit, etc.

Section I: Emission Point Information

Complete the emission point information for each emission point located at the facility.

Field 1 – Enter the identification information for the emission point.

Field 2 – Enter the identification information for the emission unit(s) associated with the emission point.

Field 3 – Enter the description of the emission unit(s) associated with the emission point.

Field 4 – Enter the identification information for the piece(s) of control equipment associated with the emission point, if applicable.

Field 5 – Enter the description of the piece(s) of control equipment associated with the emission point, if applicable.

Field 6 – Enter the raw material used in this emission unit (process). For combustion sources enter the fuel used. If multiple materials are processed through the emission unit(s), then list all application materials or fuels.

Field 7 – Enter the maximum hourly production rate for this emission unit. For combustion units this is the maximum heat input capacity (in MMBtu/hr) for the equipment.

Section II: Emission Limits

List all applicable emission limits for all applicable pollutants for the emission point. These limits can be found under "Emission Limits" in current DNR issued construction permits. If there are no applicable emission limits for an individual emission point, state "N/A" in this section.

1. Complete one set of Fields 8, 9 and 10 in this section for one applicable pollutant for the emission point, for example:

Pollutant: PM₁₀

Emission Limit: 1.25 lb/hr

Authority for Requirement: DNR Construction Permit xx-A-xxx

2. Repeat one set of Fields 8, 9 and 10 for each additional applicable pollutant.
3. Complete each field as defined below:

Field 8:

Identify the pollutants, in the following order, for the emission point:

Opacity

PM_{2.5}

PM₁₀

Particulate Matter (PM)

Sulfur Dioxide (SO₂)

Nitrogen Oxides (NO_x)

Volatile Organic Compounds (VOC)

Carbon Monoxide (CO)

Lead (Pb)

Hazardous Air Pollutants (HAP's) – Including limits for specific HAPs (i.e. Mercury, Formaldehyde, Hexane, etc.)

Other – i.e. Fluorides, NMOC, GHG, CO₂e, etc.

Field 9:

Specify the applicable emission limit(s) for the pollutant listed in Field 8. Multiple emission limits for the same pollutant shall be listed in the following order: lb/hr, tons/yr, concentration (gr/dscf), and other (lb/gallon, etc.)

Field 10:

Specify the source or authority of the emission limit(s) listed in Field 9.

- Examples of authority for requirement include DNR construction permits, Iowa Administrative Code, NSPS, NESHAP, etc.
- If multiple "Authority for Requirement" exists for the emission limit(s), list all of the applicable sources or authorities.

Section III: Operational Limits & Reporting/Recordkeeping Requirements

List all applicable operational limits and recordkeeping requirements for the emission point.

Field 11:

List all applicable operational limitations placed on the emission point. In recent DNR issued construction permits, these limits are found in "Operating Requirements and Associated Recordkeeping".

Examples of these limitations include but are not limited to:

- Process throughput limitations
- Hours of operation limitations
- Control equipment monitoring requirements
- Raw material limitations

Field 12:

List all applicable reporting and recordkeeping requirements associated with the applicable emission limit(s) or operation limit(s) for the emission point. In recent DNR issued construction permits, these requirements can be found in "Operating Requirements and Associated Recordkeeping".

Field 13:

List the source(s) or authority for the listed requirements in Fields 11 and 12.

Section IV: NSPS/NESHAP

List each New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) that has been evaluated for applicability for the emission point.

The applicant shall list each relevant NSPS subpart evaluated for applicability for the emission point and the applicability of that subpart to the emission point. Please refer to Appendix H: NSPS Reference List for a list of current NSPS subparts. In cases where an emission point is not subject to a NSPS that was evaluated, the applicant may choose to explain why that subpart does not apply.

The applicant shall list each relevant NESHAP subpart evaluated for applicability for the emission point and the applicability of that subpart to the emission point. Please refer to Appendix I: Part 63 NESHAP Reference List for a list of current NESHAP subparts. In cases where an emission point is

not subject to a NESHAP that was evaluated, the applicant may choose to explain why that subpart does not apply.

Section V: Monitoring Requirements

Complete the CAM Calculations form (spreadsheet) to determine the level of monitoring required for each emission point at the facility. CAM Calculations form (spreadsheet) shall be submitted with the Part 2 application. Along with this form, the facility shall submit background documentation for how the pre-control emission potential was calculated on a Part 1 CA-01 form or similar calculation sheet for each emission unit. Please refer to Appendix J: Compliance Assurance Monitoring for information that should be contained in these calculation sheets.

Compliance Assurance Monitoring (CAM) Plan Required?

- Check Yes or No based on evaluated CAM requirements from the CAM Calculations form.
 - If Yes, list each control equipment identification and applicable pollutant as evaluated by the CAM Calculations form.
 - Submit a CAM plan for each piece of control equipment subject to CAM requirements.

Continuous Emissions Monitoring Required?

- Check Yes or No based on required continuous emissions monitor(s) for each emission point
 - If Yes, list each monitoring equipment identification and the applicable pollutant(s) and monitoring requirements.

Section VI: Compliance Plan, Schedule & Certification

Specify the compliance status of the emission point.

- Check the appropriate box for each statement
 - If "Not in compliance" is checked for either statement indicating the existence of non-compliance issues, the applicant shall complete a compliance plan for the emission point/unit. The compliance plan shall contain the following information:
 - Term, condition, or applicable requirement** with which the facility is currently out of compliance,
 - Date** non-compliance with the permit requirement began,
 - Description** of the non-compliance,
 - Cause** of non-compliance,
 - Corrective actions** taken to bring the facility back into compliance,
 - Schedule**, with specific dates, for submitting progress reports, and
 - Date** by which the facility will be back in compliance with the requirement.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS
PART 3 - Application Certification

This form has been rescinded and is no longer valid as part of the Title V application submittal.

The Application Certification section in the rescinded Part 3 has been incorporated into the current version of the Part 1 Form 1.0 (Facility Identification and Application Certification) which must be submitted with any submittals related to Title V program.

Appendices to Application Instructions

Appendix A: Hazardous Air Pollutants

Table A-1
Hazardous Air Pollutants - by alpha

| CAS Number | Chemical Name | VOC/PM | CAS Number | Chemical Name | VOC/PM |
|------------|--------------------------------------|---------------------|------------|--|------------------|
| 75-07-0 | Acetaldehyde | VOC | 94-75-7 | 2,4-D (2,4-Dichlorophenoxyacetic Acid) (including salts and esters) | VOC ¹ |
| 60-35-5 | Acetamide | VOC | | DDE (1,1-dichloro-2,2-bis(p-chlorophenyl) ethylene) | VOC ¹ |
| 75-05-8 | Acetonitrile | VOC | 117-81-7 | Di(2-ethylhexyl) phthalate (DEHP) | VOC ¹ |
| 98-86-2 | Acetophenone | VOC | 334-88-3 | Diazomethane | VOC |
| 53-96-3 | 2-Acetylaminofluorene | VOC ¹ | 132-64-9 | Dibenzofuran | VOC ¹ |
| 107-02-8 | Acrolein | VOC | 96-12-8 | 1,2-Dibromo-3-chloropropane | VOC |
| 79-06-1 | Acrylamide | VOC | 84-74-2 | Dibutyl phthalate | VOC ¹ |
| 79-10-7 | Acrylic acid | VOC | 106-46-7 | 1,4-Dichlorobenzene | VOC |
| 107-13-1 | Acrylonitrile | VOC | 91-94-1 | 3,3'-Dichlorobenzidine | VOC ¹ |
| 107-05-1 | Allyl chloride | VOC | | Dichloroethyl ether (Bis(2-chloroethyl) ether) | VOC |
| 92-67-1 | 4-Aminobiphenyl | VOC ¹ | 111-44-4 | | |
| 62-53-3 | Aniline | VOC | 542-75-6 | 1,3-Dichloropropene | VOC |
| 90-04-0 | o-Anisidine | VOC | 62-73-7 | Dichlorvos | VOC |
| 0 | Antimony Compounds | PM | 111-42-2 | Diethanolamine | VOC |
| 0 | Arsenic Compounds | PM ² | 64-67-5 | Diethyl sulfate | VOC |
| 1332-21-4 | Asbestos (friable) | PM | 119-90-4 | 3,3'-Dimethoxybenzidine | VOC ¹ |
| 71-43-2 | Benzene | VOC | 60-11-7 | 4-Dimethylaminoazobenzene | VOC ¹ |
| 92-87-5 | Benzidine | VOC ¹ | 121-69-7 | N,N-Dimethylaniline | VOC |
| 98-07-7 | Benzotrichloride | VOC | 119-93-7 | 3,3'-Dimethylbenzidine | VOC ¹ |
| 100-44-7 | Benzyl chloride | VOC | 79-44-7 | Dimethylcarbamoyl chloride | VOC |
| 0 | Beryllium Compounds | PM | 68-12-2 | Dimethylformamide | VOC |
| 92-52-4 | Biphenyl | VOC | 57-14-7 | 1,1-Dimethylhydrazine | VOC |
| 542-88-1 | Bis(chloromethyl) ether | VOC | 131-11-3 | Dimethyl phthalate | VOC |
| 75-25-2 | Bromoform | VOC | 77-78-1 | Dimethyl sulfate | VOC |
| 106-99-0 | 1,3-Butadiene | VOC | 534-52-1 | 4,6-Dinitro-o-cresol (including salts) | VOC ¹ |
| 0 | Cadmium Compounds | PM | 51-28-5 | 2,4-Dinitrophenol | VOC ¹ |
| 156-62-7 | Calcium cyanamide | PM | 121-14-2 | 2,4-Dinitrotoluene | VOC |
| 133-06-2 | Captan | VOC ¹ | 123-91-1 | 1,4-Dioxane (1,4-Diethylene oxide) | VOC |
| 63-25-2 | Carbaryl | VOC ¹ | 122-66-7 | 1,2-Diphenylhydrazine | VOC |
| 75-15-0 | Carbon disulfide | VOC | | Epichlorohydrin (1-Chloro-2,3-epoxypropane) | VOC |
| 56-23-5 | Carbon tetrachloride | VOC | 106-89-8 | | |
| 463-58-1 | Carbonyl sulfide | VOC | | 1,2-Epoxybutane (1,2-Butylene oxide) | VOC |
| 120-80-9 | Catechol | VOC | 140-88-5 | Ethyl acrylate | VOC |
| 133-90-4 | Chloramben | VOC ¹ | 100-41-4 | Ethylbenzene | VOC |
| 57-74-9 | Chlordane | VOC ¹ | 75-00-3 | Ethyl chloride (Chloroethane) | VOC |
| 7782-50-5 | Chlorine | | 106-93-4 | Ethylene dibromide (Dibromoethane) | VOC |
| 79-11-8 | Chloroacetic acid | VOC | | Ethylene dichloride (1,2-Dichloroethane) | VOC |
| 532-27-4 | 2-Chloroacetophenone | VOC | 107-06-2 | | |
| 108-90-7 | Chlorobenzene | VOC | | Ethylene glycol | VOC |
| 510-15-6 | Chlorobenzilate | VOC ¹ | 107-21-1 | Ethyleneimine (Aziridine) | VOC |
| 67-66-3 | Chloroform | VOC | 151-56-4 | Ethylene oxide | VOC |
| 107-30-2 | Chloromethyl methyl ether | VOC | 75-21-8 | Ethylene thiourea | VOC |
| 126-99-8 | Chloroprene (2-chloro-1,3-butadiene) | VOC | 96-45-7 | Ethylidene dichloride (1,1-Dichloroethane) | VOC |
| 0 | Chromium Compounds | PM | 75-34-3 | | |
| 0 | Cobalt Compounds | PM | | Fine Mineral Fibers | PM |
| 0 | Coke Oven Emissions | VOC/PM ³ | 50-00-0 | Formaldehyde | VOC |
| 1319-77-3 | Cresol/Cresylic acid (mixed isomers) | VOC | | Glycol Ethers, except CAS #111-76-2, ethylene glycol mono-butyl ether, also known as EGBE or 2-Butoxyethanol | VOC |
| 108-39-4 | m-Cresol | VOC | | | |
| 95-48-7 | o-Cresol | VOC | | | |
| 106-44-5 | p-Cresol | VOC | | | |
| 98-82-8 | Cumene | VOC | | | |
| 0 | Cyanide Compounds | PM ² | | | |
| | | | 76-44-8 | Heptachlor | VOC |
| | | | 118-74-1 | Hexachlorobenzene | VOC |

Iowa Title V Operating Permit Application Instructions
Appendix A: Hazardous Air Pollutants

| CAS Number | Chemical Name | VOC/PM |
|------------|---|------------------|
| 87-68-3 | Hexachloro-1,3-butadiene | VOC |
| 77-47-4 | Hexachlorocyclopentadiene | VOC |
| 67-72-1 | Hexachloroethane | VOC |
| 822-06-0 | Hexamethylene-1,6-diisocyanate | VOC |
| 680-31-9 | Hexamethylphosphoramide | VOC |
| 110-54-3 | Hexane | VOC |
| 302-01-2 | Hydrazine | |
| 7647-01-0 | Hydrochloric acid (HCl) | PM ⁵ |
| 7664-39-3 | Hydrogen fluoride (HF) | PM ⁵ |
| 123-31-9 | Hydroquinone | VOC ¹ |
| 78-59-1 | Isophorone | VOC |
| 0 | Lead Compounds | PM |
| 58-89-9 | Lindane (1,2,3,4,5,6-Hexachlorocyclohexane) | VOC ¹ |
| 108-31-6 | Maleic anhydride | VOC ¹ |
| 0 | Manganese Compounds | PM |
| 0 | Mercury Compounds | PM ² |
| 67-56-1 | Methanol | VOC |
| 72-43-5 | Methoxychlor | VOC ¹ |
| 74-83-9 | Methyl bromide (Bromomethane) | VOC |
| 74-87-3 | Methyl chloride (Chloromethane) | VOC |
| 71-55-6 | Methyl chloroform (1,1,1-Trichloroethane) | NR ⁴ |
| 60-34-4 | Methylhydrazine | VOC |
| 74-88-4 | Methyl iodide (Iodomethane) | VOC |
| 108-10-1 | Methyl isobutyl ketone (MIBK) (Hexone) | VOC |
| 624-83-9 | Methyl isocyanate | VOC |
| 80-62-6 | Methyl methacrylate | VOC |
| 1634-04-4 | Methyl tert-butyl ether (MTBE) | VOC |
| 101-14-4 | 4,4'-Methylenebis(2-chloroaniline) | VOC ¹ |
| 75-09-2 | Methylene chloride (Dichloromethane) | NR ⁴ |
| 101-77-9 | 4,4'-Methylenedianiline | VOC ¹ |
| 101-68-8 | 4,4'-Methylenediphenyl diisocyanate (MDI) | VOC |
| 91-20-3 | Naphthalene | VOC |
| 0 | Nickel Compounds | PM |
| 98-95-3 | Nitrobenzene | VOC |
| 92-93-3 | 4-Nitrobiphenyl | VOC ¹ |
| 100-02-7 | 4-Nitrophenol | VOC ¹ |
| 79-46-9 | 2-Nitropropane | VOC |
| 62-75-9 | N-Nitrosodimethylamine | VOC |
| 684-93-5 | N-Nitroso-N-methylurea | VOC |
| 59-89-2 | N-Nitrosomorpholine | VOC |
| 56-38-2 | Parathion | VOC ¹ |
| 82-68-8 | Pentachloronitrobenzene (Quintobenzene) | VOC |
| 87-86-5 | Pentachlorophenol | VOC ¹ |
| 108-95-2 | Phenol | VOC |
| 106-50-3 | p-Phenylenediamine | VOC ¹ |

| CAS Number | Chemical Name | VOC/PM |
|------------|---|------------------|
| 75-44-5 | Phosgene | VOC |
| 7803-51-2 | Phosphine | |
| 7723-14-0 | Phosphorus (yellow or white) | PM ² |
| 85-44-9 | Phthalic anhydride | VOC ¹ |
| 1336-36-3 | Polychlorinated biphenyls (PCBs) (Aroclors) | VOC ¹ |
| 0 | Polycyclic Organic Matter | VOC ¹ |
| 1120-71-4 | 1,3-Propane sultone | VOC |
| 57-57-8 | beta-Propiolactone | VOC |
| 123-38-6 | Propionaldehyde | VOC |
| 114-26-1 | Propoxur (Baygon) | VOC ¹ |
| 78-87-5 | Propylene dichloride (1,2-Dichloropropane) | VOC |
| 75-56-9 | Propylene oxide | VOC |
| 75-55-8 | 1,2-Propylenimine (2-Methylaziridine) | VOC |
| 91-22-5 | Quinoline | VOC |
| 106-51-4 | Quinone (p-Benzoquinone) | VOC |
| 0 | Radionuclides (including radon) | PM ² |
| 0 | Selenium Compounds | PM |
| 100-42-5 | Styrene | VOC |
| 96-09-3 | Styrene oxide | VOC |
| 1746-01-6 | 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) | VOC ¹ |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | VOC |
| 127-18-4 | Tetrachloroethylene (Perchloroethylene) | NR ⁴ |
| 7550-45-0 | Titanium tetrachloride | |
| 108-88-3 | Toluene | VOC |
| 95-80-7 | 2,4-Toluenediamine (2,4-Diaminotoluene) | VOC ¹ |
| 584-84-9 | 2,4-Toluene diisocyanate | VOC |
| 95-53-4 | o-Toluidine | VOC |
| 8001-35-2 | Toxaphene (chlorinated camphene) | VOC ¹ |
| 120-82-1 | 1,2,4-Trichlorobenzene | VOC |
| 79-00-5 | 1,1,2-Trichloroethane | VOC |
| 79-01-6 | Trichloroethylene | VOC |
| 95-95-4 | 2,4,5-Trichlorophenol | VOC |
| 88-06-2 | 2,4,6-Trichlorophenol | VOC |
| 121-44-8 | Triethylamine | VOC |
| 1582-09-8 | Trifluralin | VOC ¹ |
| 540-84-1 | 2,2,4-Trimethylpentane | VOC |
| 51-79-6 | Urethane (Ethyl carbamate) | VOC |
| 108-05-4 | Vinyl acetate | VOC |
| 593-60-2 | Vinyl bromide (Bromoethene) | VOC |
| 75-01-4 | Vinyl chloride (Chloroethene) | VOC |
| 75-35-4 | Vinylidene chloride (1,1-dichloroethylene) | VOC |
| 1330-20-7 | Xylenes (mixed isomers) | VOC |
| 108-38-3 | m-Xylene | VOC |
| 95-47-6 | o-Xylene | VOC |
| 106-42-3 | p-Xylene | VOC |

Notes:

- 1 This compound is defined as a VOC (40 CFR 51.100), but has a low vapor pressure. Emissions may be measured as either VOC or PM, depending on the process generating the emissions, and the test method used to measure the emissions.
- 2 Compounds in this class may be emitted as PM or as inorganic vapors.
- 3 Compounds in this class may be emitted as PM or as VOC.
- 4 Not Reactive-these compounds have been determined to have negligible photochemical reactivity, and are not defined as VOC (40 CFR 51.100)
- 5 DNR determined in May, 2016 that HCl and HF be considered as PM for Title V emissions fee purposes.

Table A-2
Hazardous Air Pollutants - by CAS Number

| CAS Number | Chemical Name | VOC/PM | CAS Number | Chemical Name | VOC/PM |
|------------|--|---------------------|------------|---|------------------|
| 0 | Antimony Compounds | PM | 75-25-2 | Bromoform | VOC |
| 0 | Arsenic Compounds | PM ² | 75-34-3 | Ethylidene dichloride (1,1-Dichloroethane) | VOC |
| 0 | Beryllium Compounds | PM | 75-35-4 | Vinylidene chloride (1,1-dichloroethylene) | VOC |
| 0 | Cadmium Compounds | PM | 75-44-5 | Phosgene | VOC |
| 0 | Chromium Compounds | PM | 75-55-8 | 1,2-Propylenimine (2-Methylaziridine) | VOC |
| 0 | Cobalt Compounds | PM | 75-56-9 | Propylene oxide | VOC |
| 0 | Coke Oven Emissions | VOC/PM ³ | 76-44-8 | Heptachlor | VOC |
| 0 | Cyanide Compounds | PM ² | 77-47-4 | Hexachlorocyclopentadiene | VOC |
| 0 | Fine Mineral Fibers | PM | 77-78-1 | Dimethyl sulfate | VOC |
| 0 | Glycol Ethers, except CAS #111-76-2, ethylene glycol mono-butyl ether, also known as EGBE or 2-Butoxyethanol | VOC | 78-59-1 | Isophorone | VOC |
| 0 | Lead Compounds | PM | 78-87-5 | Propylene dichloride (1,2-Dichloropropane) | VOC |
| 0 | Manganese Compounds | PM | 79-00-5 | 1,1,2-Trichloroethane | VOC |
| 0 | Mercury Compounds | PM ² | 79-01-6 | Trichloroethylene | VOC |
| 0 | Nickel Compounds | PM | 79-06-1 | Acrylamide | VOC |
| 0 | Polycyclic Organic Matter | VOC ¹ | 79-10-7 | Acrylic acid | VOC |
| 0 | Radionuclides (including radon) | PM ² | 79-11-8 | Chloroacetic acid | VOC |
| 0 | Selenium Compounds | PM | 79-34-5 | 1,1,2,2-Tetrachloroethane | VOC |
| 50-00-0 | Formaldehyde | VOC | 79-44-7 | Dimethylcarbamoyl chloride | VOC |
| 51-28-5 | 2,4-Dinitrophenol | VOC ¹ | 79-46-9 | 2-Nitropropane | VOC |
| 51-79-6 | Urethane (Ethyl carbamate) | VOC | 80-62-6 | Methyl methacrylate | VOC |
| 53-96-3 | 2-Acetylaminofluorene | VOC ¹ | 82-68-8 | Pentachloronitrobenzene (Quintobenzene) | VOC |
| 56-23-5 | Carbon tetrachloride | VOC | 84-74-2 | Dibutyl phthalate | VOC ¹ |
| 56-38-2 | Parathion | VOC ¹ | 85-44-9 | Phthalic anhydride | VOC ¹ |
| 57-14-7 | 1,1-Dimethylhydrazine | VOC | 87-68-3 | Hexachloro-1,3-butadiene | VOC |
| 57-57-8 | beta-Propiolactone | VOC | 87-86-5 | Pentachlorophenol | VOC ¹ |
| 57-74-9 | Chlordane | VOC ¹ | 88-06-2 | 2,4,6-Trichlorophenol | VOC |
| 58-89-9 | Lindane (1,2,3,4,5,6-Hexachlorocyclohexane) | VOC ¹ | 90-04-0 | o-Anisidine | VOC |
| 59-89-2 | N-Nitrosomorpholine | VOC | 91-20-3 | Naphthalene | VOC |
| 60-11-7 | 4-Dimethylaminoazobenzene | VOC ¹ | 91-22-5 | Quinoline | VOC |
| 60-34-4 | Methylhydrazine | VOC | 91-94-1 | 3,3'-Dichlorobenzidine | VOC ¹ |
| 60-35-5 | Acetamide | VOC | 92-52-4 | Biphenyl | VOC |
| 62-53-3 | Aniline | VOC | 92-67-1 | 4-Aminobiphenyl | VOC ¹ |
| 62-73-7 | Dichlorvos | VOC | 92-87-5 | Benzidine | VOC ¹ |
| 62-75-9 | N-Nitrosodimethylamine | VOC | 92-93-3 | 4-Nitrobiphenyl | VOC ¹ |
| 63-25-2 | Carbaryl | VOC ¹ | 94-75-7 | 2,4-D (2,4-Dichlorophenoxyacetic Acid) (including salts and esters) | VOC ¹ |
| 64-67-5 | Diethyl sulfate | VOC | 95-47-6 | o-Xylene | VOC |
| 67-56-1 | Methanol | VOC | 95-48-7 | o-Cresol | VOC |
| 67-66-3 | Chloroform | VOC | 95-53-4 | o-Toluidine | VOC |
| 67-72-1 | Hexachloroethane | VOC | 95-80-7 | 2,4-Toluenediamine (2,4-Diaminotoluene) | VOC ¹ |
| 68-12-2 | Dimethylformamide | VOC | 95-95-4 | 2,4,5-Trichlorophenol | VOC |
| 71-43-2 | Benzene | VOC | 96-09-3 | Styrene oxide | VOC |
| 71-55-6 | Methyl chloroform (1,1,1-Trichloroethane) | NR ⁴ | 96-12-8 | 1,2-Dibromo-3-chloropropane | VOC |
| 72-43-5 | Methoxychlor | VOC ¹ | 96-45-7 | Ethylene thiourea | VOC |
| 72-55-9 | DDE (1,1-dichloro-2,2-bis(p-chlorophenyl) ethylene) | VOC ¹ | 98-07-7 | Benzotrichloride | VOC |
| 74-83-9 | Methyl bromide (Bromomethane) | VOC | 98-82-8 | Cumene | VOC |
| 74-87-3 | Methyl chloride (Chloromethane) | VOC | 98-86-2 | Acetophenone | VOC |
| 74-88-4 | Methyl iodide (Iodomethane) | VOC | 98-95-3 | Nitrobenzene | VOC |
| 75-00-3 | Ethyl chloride (Chloroethane) | VOC | 100-02-7 | 4-Nitrophenol | VOC ¹ |
| 75-01-4 | Vinyl chloride (Chloroethene) | VOC | 100-41-4 | Ethylbenzene | VOC |
| 75-05-8 | Acetonitrile | VOC | 100-42-5 | Styrene | VOC |
| 75-07-0 | Acetaldehyde | VOC | 100-44-7 | Benzyl chloride | VOC |
| 75-09-2 | Methylene chloride (Dichloromethane) | NR ⁴ | 101-14-4 | 4,4'-Methylenebis(2-chloroaniline) | VOC ¹ |
| 75-15-0 | Carbon disulfide | VOC | 101-68-8 | 4,4'-Methylenediphenyl diisocyanate (MDI) | VOC |
| 75-21-8 | Ethylene oxide | VOC | | | |

Iowa Title V Operating Permit Application Instructions
Appendix A: Hazardous Air Pollutants

| CAS Number | Chemical Name | VOC/PM |
|------------|--|------------------|
| 101-77-9 | 4,4'-Methylenedianiline | VOC ¹ |
| 106-42-3 | p-Xylene | VOC |
| 106-44-5 | p-Cresol | VOC |
| 106-46-7 | 1,4-Dichlorobenzene | VOC |
| 106-50-3 | p-Phenylenediamine | VOC ¹ |
| 106-51-4 | Quinone (p-Benzoquinone) | VOC |
| 106-88-7 | 1,2-Epoxybutane (1,2-Butylene oxide) | VOC |
| 106-89-8 | Epichlorohydrin (1-Chloro-2,3-epoxypropane) | VOC |
| 106-93-4 | Ethylene dibromide (Dibromoethane) | VOC |
| 106-99-0 | 1,3-Butadiene | VOC |
| 107-02-8 | Acrolein | VOC |
| 107-05-1 | Allyl chloride | VOC |
| 107-06-2 | Ethylene dichloride (1,2-Dichloroethane) | VOC |
| 107-13-1 | Acrylonitrile | VOC |
| 107-21-1 | Ethylene glycol | VOC |
| 107-30-2 | Chloromethyl methyl ether | VOC |
| 108-05-4 | Vinyl acetate | VOC |
| 108-10-1 | Methyl isobutyl ketone (MIBK) (Hexone) | VOC |
| 108-31-6 | Maleic anhydride | VOC ¹ |
| 108-38-3 | m-Xylene | VOC |
| 108-39-4 | m-Cresol | VOC |
| 108-88-3 | Toluene | VOC |
| 108-90-7 | Chlorobenzene | VOC |
| 108-95-2 | Phenol | VOC |
| 110-54-3 | Hexane | VOC |
| 111-42-2 | Diethanolamine | VOC |
| 111-44-4 | Dichloroethyl ether (Bis(2-chloroethyl) ether) | VOC |
| 114-26-1 | Propoxur (Baygon) | VOC ¹ |
| 117-81-7 | Di(2-ethylhexyl) phthalate (DEHP) | VOC ¹ |
| 118-74-1 | Hexachlorobenzene | VOC |
| 119-90-4 | 3,3'-Dimethoxybenzidine | VOC ¹ |
| 119-93-7 | 3,3'-Dimethylbenzidine | VOC ¹ |
| 120-80-9 | Catechol | VOC |
| 120-82-1 | 1,2,4-Trichlorobenzene | VOC |
| 121-14-2 | 2,4-Dinitrotoluene | VOC |
| 121-44-8 | Triethylamine | VOC |
| 121-69-7 | N,N-Dimethylaniline | VOC |
| 122-66-7 | 1,2-Diphenylhydrazine | VOC |
| 123-31-9 | Hydroquinone | VOC ¹ |
| 123-38-6 | Propionaldehyde | VOC |

| CAS Number | Chemical Name | VOC/PM |
|------------|---|------------------|
| 123-91-1 | 1,4-Dioxane (1,4-Diethylene oxide) | VOC |
| 126-99-8 | Chloroprene (2-chloro-1,3-butadiene) | VOC |
| 127-18-4 | Tetrachloroethylene (Perchloroethylene) | NR ⁴ |
| 131-11-3 | Dimethyl phthalate | VOC |
| 132-64-9 | Dibenzofuran | VOC ¹ |
| 133-06-2 | Captan | VOC ¹ |
| 133-90-4 | Chloramben | VOC ¹ |
| 140-88-5 | Ethyl acrylate | VOC |
| 151-56-4 | Ethyleneimine (Aziridine) | VOC |
| 156-62-7 | Calcium cyanamide | PM |
| 302-01-2 | Hydrazine | |
| 334-88-3 | Diazomethane | VOC |
| 463-58-1 | Carbonyl sulfide | VOC |
| 510-15-6 | Chlorobenzilate | VOC ¹ |
| 532-27-4 | 2-Chloroacetophenone | VOC |
| 534-52-1 | 4,6-Dinitro-o-cresol (including salts) | VOC ¹ |
| 540-84-1 | 2,2,4-Trimethylpentane | VOC |
| 542-75-6 | 1,3-Dichloropropene | VOC |
| 542-88-1 | Bis(chloromethyl) ether | VOC |
| 584-84-9 | 2,4-Toluene diisocyanate | VOC |
| 593-60-2 | Vinyl bromide (Bromoethene) | VOC |
| 624-83-9 | Methyl isocyanate | VOC |
| 680-31-9 | Hexamethylphosphoramide | VOC |
| 684-93-5 | N-Nitroso-N-methylurea | VOC |
| 822-06-0 | Hexamethylene-1,6-diisocyanate | VOC |
| 1120-71-4 | 1,3-Propane sultone | VOC |
| 1319-77-3 | Cresol/Cresylic acid (mixed isomers) | VOC |
| 1330-20-7 | Xylenes (mixed isomers) | VOC |
| 1332-21-4 | Asbestos (friable) | PM |
| 1336-36-3 | Polychlorinated biphenyls (PCBs) (Aroclors) | VOC ¹ |
| 1582-09-8 | Trifluralin | VOC ¹ |
| 1634-04-4 | Methyl tert-butyl ether (MTBE) | VOC |
| 1746-01-6 | 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) | VOC ¹ |
| 7550-45-0 | Titanium tetrachloride | |
| 7647-01-0 | Hydrochloric acid (HCl) | PM ⁵ |
| 7664-39-3 | Hydrogen fluoride (HF) | PM ⁵ |
| 7723-14-0 | Phosphorus (yellow or white) | PM ² |
| 7782-50-5 | Chlorine | |
| 7803-51-2 | Phosphine | |
| 8001-35-2 | Toxaphene (chlorinated camphene) | VOC ¹ |

Notes:

- 1 This compound is defined as a VOC (40 CFR 51.100), but has a low vapor pressure. Emissions may be measured as either VOC or PM, depending on the process generating the emissions, and the test method used to measure the emissions.
- 2 Compounds in this class may be emitted as PM or as inorganic vapors.
- 3 Compounds in this class may be emitted as PM or as VOC.
- 4 Not Reactive-these compounds have been determined to have negligible photochemical reactivity, and are not defined as VOC (40 CFR 51.100)
- 5 DNR determined in May, 2016 that HCl and HF be considered as PM for Title V emissions fee purposes.

Appendix B: Accidental Release Prevention

Table B-1

LIST OF REGULATED TOXIC SUBSTANCES AND THRESHOLD QUANTITIES - by alpha

| CAS No. | Chemical name | Threshold quantity (lbs) | Basis for listing |
|------------|--|--------------------------|-------------------|
| 107-02-8 | Acrolein [2-Propenal] | 5,000 | b |
| 107-13-1 | Acrylonitrile [2-Propenenitrile] | 20,000 | b |
| 814-68-6 | Acrylyl chloride [2-Propenoyl chloride] | 5,000 | b |
| 107-18-6 | Allyl alcohol [2-Propen-1-ol] | 15,000 | b |
| 107-11-9 | Allylamine [2-Propen-1-amine] | 10,000 | b |
| 7664-41-7 | Ammonia (anhydrous) | 10,000 | a, b |
| 7664-41-7 | Ammonia (conc 20% or greater) | 20,000 | a, b |
| 7784-34-1 | Arsenous trichloride | 15,000 | b |
| 7784-42-1 | Arsine | 1,000 | b |
| 10294-34-5 | Boron trichloride [Borane, trichloro-] | 5,000 | b |
| 7637-07-2 | Boron trifluoride [Borane, trifluoro-] | 5,000 | b |
| 353-42-4 | Boron trifluoride compound with methyl ether (1:1) [Boron, trifluoro[oxybis[methane]]-, T-4- | 15,000 | b |
| 7726-95-6 | Bromine | 10,000 | a, b |
| 75-15-0 | Carbon disulfide | 20,000 | b |
| 7782-50-5 | Chlorine | 2,500 | a, b |
| 10049-04-4 | Chlorine dioxide [Chlorine oxide (ClO ₂)] | 1,000 | c |
| 67-66-3 | Chloroform [Methane, trichloro-] | 20,000 | b |
| 542-88-1 | Chloromethyl ether [Methane, oxybis[chloro-] | 1,000 | b |
| 107-30-2 | Chloromethyl methyl ether [Methane, chloromethoxy-] | 5,000 | b |
| 4170-30-3 | Crotonaldehyde [2-Butenal] | 20,000 | b |
| 123-73-9 | Crotonaldehyde, (E)- [2-Butenal, (E)-] | 20,000 | b |
| 506-77-4 | Cyanogen chloride | 10,000 | c |
| 108-91-8 | Cyclohexylamine [Cyclohexanamine] | 15,000 | b |
| 19287-45-7 | Diborane | 2,500 | b |
| 75-78-5 | Dimethyldichlorosilane [Silane, dichlorodimethyl-] | 5,000 | b |
| 57-14-7 | 1,1-Dimethylhydrazine [Hydrazine, 1,1-dimethyl-] | 15,000 | b |
| 106-89-8 | Epichlorohydrin [Oxirane, (chloromethyl)-] | 20,000 | b |
| 75-21-8 | Ethylene oxide [Oxirane] | 10,000 | a, b |
| 107-15-3 | Ethylenediamine [1,2-Ethanediamine] | 20,000 | b |
| 151-56-4 | Ethyleneimine [Aziridine] | 10,000 | b |
| 7782-41-4 | Fluorine | 1,000 | b |
| 50-00-0 | Formaldehyde (solution) | 15,000 | b |
| 110-00-9 | Furan | 5,000 | b |
| 302-01-2 | Hydrazine | 15,000 | b |
| 7647-01-0 | Hydrochloric acid (conc 37% or greater) | 15,000 | d |
| 74-90-8 | Hydrocyanic acid | 2,500 | a, b |
| 7647-01-0 | Hydrogen chloride (anhydrous) [Hydrochloric acid] | 5,000 | a |
| 7664-39-3 | Hydrogen fluoride (conc 50% or greater) [Hydrofluoric acid] | 1,000 | a, b |
| 7783-07-5 | Hydrogen selenide | 500 | b |
| 7783-06-4 | Hydrogen sulfide | 10,000 | a, b |
| 13463-40-6 | Iron, pentacarbonyl- [Iron carbonyl (Fe(CO) ₅), (TB-5-11)-] | 2,500 | b |
| 78-82-0 | Isobutyronitrile [Propanenitrile, 2-methyl-] | 20,000 | b |

| CAS No. | Chemical name | Threshold quantity (lbs) | Basis for listing |
|------------|---|--------------------------|-------------------|
| 108-23-6 | Isopropyl chloroformate [Carbonochloridic acid, 1-methylethyl ester] | 15,000 | b |
| 126-98-7 | Methacrylonitrile [2-Propenenitrile, 2-methyl-] | 10,000 | b |
| 74-87-3 | Methyl chloride [Methane, chloro-] | 10,000 | a |
| 79-22-1 | Methyl chloroformate [Carbonochloridic acid, methylester] | 5,000 | b |
| 60-34-4 | Methyl hydrazine [Hydrazine, methyl-] | 15,000 | b |
| 624-83-9 | Methyl isocyanate [Methane, isocyanato-] | 10,000 | a, b |
| 74-93-1 | Methyl mercaptan [Methanethiol] | 10,000 | b |
| 556-64-9 | Methyl thiocyanate [Thiocyanic acid, methyl ester] | 20,000 | b |
| 75-79-6 | Methyltrichlorosilane [Silane, trichloromethyl-] | 5,000 | b |
| 13463-39-3 | Nickel carbonyl | 1,000 | b |
| 7697-37-2 | Nitric acid (conc 80% or greater) | 15,000 | b |
| 10102-43-9 | Nitric oxide [Nitrogen oxide (NO)] | 10,000 | b |
| 8014-95-7 | Oleum (Fuming Sulfuric acid) [Sulfuric acid, mixture with sulfur trioxide] ¹ | 10,000 | e |
| 79-21-0 | Peracetic acid [Ethaneperoxoic acid] | 10,000 | b |
| 594-42-3 | Perchloromethylmercaptan [Methanesulphenyl chloride, trichloro-] | 10,000 | b |
| 75-44-5 | Phosgene [Carbonic dichloride] | 500 | a, b |
| 7803-51-2 | Phosphine | 5,000 | b |
| 10025-87-3 | Phosphorus oxychloride [Phosphoryl chloride] | 5,000 | b |
| 7719-12-2 | Phosphorus trichloride | 15,000 | b |
| 110-89-4 | Piperidine | 15,000 | b |
| 107-12-0 | Propionitrile [Propanenitrile] | 10,000 | b |
| 109-61-5 | Propyl chloroformate [Carbonochloridic acid, propylester] | 15,000 | b |
| 75-56-9 | Propylene oxide [Oxirane, methyl-] | 10,000 | b |
| 75-55-8 | Propyleneimine [Aziridine, 2-methyl-] | 10,000 | b |
| 7446-09-5 | Sulfur dioxide (anhydrous) | 5,000 | a, b |
| 7783-60-0 | Sulfur tetrafluoride [Sulfur fluoride (SF ₄), (T-4)-] | 2,500 | b |
| 7446-11-9 | Sulfur trioxide | 10,000 | a, b |
| 75-74-1 | Tetramethyllead [Plumbane, tetramethyl-] | 10,000 | b |
| 509-14-8 | Tetranitromethane [Methane, tetranitro-] | 10,000 | b |
| 7550-45-0 | Titanium tetrachloride [Titanium chloride (TiCl ₄) (T-4)-] | 2,500 | B |
| 584-84-9 | Toluene 2,4-diisocyanate [Benzene, 2,4-diisocyanato-1-methyl-] ¹ | 10,000 | a |
| 91-08-7 | Toluene 2,6-diisocyanate [Benzene, 1,3-diisocyanato-2-methyl-] ¹ | 10,000 | a |
| 26471-62-5 | Toluene diisocyanate (unspecified isomer) [Benzene,1,3-diisocyanatomethyl-1] ¹ | 10,000 | a |
| 75-77-4 | Trimethylchlorosilane [Silane, chlorotrimethyl-] | 10,000 | b |
| 108-05-4 | Vinyl acetate monomer [Acetic acid ethenyl ester] | 15,000 | b |

¹ The mixture exemption in 40 CFR 68.115(b)(1) does not apply to the substance.

Note: Basis for Listing:

- a Mandated for listing by Congress.
- b On EHS list, vapor pressure 10 mmHg or greater.
- c Toxic gas.
- d Toxicity of hydrogen chloride, potential to release hydrogen chloride, and history of accidents.
- e Toxicity of sulfur trioxide and sulfuric acid, potential to release sulfur trioxide, and history of accidents.

Table B-2

LIST OF REGULATED TOXIC SUBSTANCES AND THRESHOLD QUANTITIES - by CAS Number

| CAS No. | Chemical name | Threshold quantity (lbs) | Basis for listing |
|----------------|--|---------------------------------|--------------------------|
| 50-00-0 | Formaldehyde (solution) | 15,000 | b |
| 57-14-7 | 1,1-Dimethylhydrazine [Hydrazine, 1,1-dimethyl-] | 15,000 | b |
| 60-34-4 | Methyl hydrazine [Hydrazine, methyl-] | 15,000 | b |
| 67-66-3 | Chloroform [Methane, trichloro-] | 20,000 | b |
| 74-87-3 | Methyl chloride [Methane, chloro-] | 10,000 | a |
| 74-90-8 | Hydrocyanic acid | 2,500 | a, b |
| 74-93-1 | Methyl mercaptan [Methanethiol] | 10,000 | b |
| 75-15-0 | Carbon disulfide | 20,000 | b |
| 75-21-8 | Ethylene oxide [Oxirane] | 10,000 | a, b |
| 75-44-5 | Phosgene [Carbonic dichloride] | 500 | a, b |
| 75-55-8 | Propyleneimine [Aziridine, 2-methyl-] | 10,000 | b |
| 75-56-9 | Propylene oxide [Oxirane, methyl-] | 10,000 | b |
| 75-74-1 | Tetramethyllead [Plumbane, tetramethyl-] | 10,000 | b |
| 75-77-4 | Trimethylchlorosilane [Silane, chlorotrimethyl-] | 10,000 | b |
| 75-78-5 | Dimethyldichlorosilane [Silane, dichlorodimethyl-] | 5,000 | b |
| 75-79-6 | Methyltrichlorosilane [Silane, trichloromethyl-] | 5,000 | b |
| 78-82-0 | Isobutyronitrile [Propanenitrile, 2-methyl-] | 20,000 | b |
| 79-21-0 | Peracetic acid [Ethaneperoxoic acid] | 10,000 | b |
| 79-22-1 | Methyl chloroformate [Carbonochloridic acid, methylester] | 5,000 | b |
| 91-08-7 | Toluene 2,6-diisocyanate [Benzene, 1,3-diisocyanato-2-methyl-] ¹ | 10,000 | a |
| 106-89-8 | Epichlorohydrin [Oxirane, (chloromethyl)-] | 20,000 | b |
| 107-02-8 | Acrolein [2-Propenal] | 5,000 | b |
| 107-11-9 | Allylamine [2-Propen-1-amine] | 10,000 | b |
| 107-12-0 | Propionitrile [Propanenitrile] | 10,000 | b |
| 107-13-1 | Acrylonitrile [2-Propenenitrile] | 20,000 | b |
| 107-15-3 | Ethylenediamine [1,2-Ethanediamine] | 20,000 | b |
| 107-18-6 | Allyl alcohol [2-Propen-1-ol] | 15,000 | b |
| 107-30-2 | Chloromethyl methyl ether [Methane, chloromethoxy-] | 5,000 | b |
| 108-05-4 | Vinyl acetate monomer [Acetic acid ethenyl ester] | 15,000 | b |
| 108-23-6 | Isopropyl chloroformate [Carbonochloridic acid, 1-methylethyl ester] | 15,000 | b |
| 108-91-8 | Cyclohexylamine [Cyclohexanamine] | 15,000 | b |
| 109-61-5 | Propyl chloroformate [Carbonochloridic acid, propylester] | 15,000 | b |
| 110-00-9 | Furan | 5,000 | b |
| 110-89-4 | Piperidine | 15,000 | b |
| 123-73-9 | Crotonaldehyde, (E)- [2-Butenal, (E)-] | 20,000 | b |
| 126-98-7 | Methacrylonitrile [2-Propenenitrile, 2-methyl-] | 10,000 | b |
| 151-56-4 | Ethyleneimine [Aziridine] | 10,000 | B |
| 302-01-2 | Hydrazine | 15,000 | b |
| 353-42-4 | Boron trifluoride compound with methyl ether (1:1) [Boron, trifluoro[oxybis[methane]]-, T-4- | 15,000 | b |
| 506-77-4 | Cyanogen chloride | 10,000 | c |
| 509-14-8 | Tetranitromethane [Methane, tetranitro-] | 10,000 | b |
| 542-88-1 | Chloromethyl ether [Methane, oxybis[chloro-] | 1,000 | b |
| 556-64-9 | Methyl thiocyanate [Thiocyanic acid, methyl ester] | 20,000 | b |
| 584-84-9 | Toluene 2,4-diisocyanate [Benzene, 2,4-diisocyanato-1-methyl-] ¹ | 10,000 | a |

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| CAS No. | Chemical name | Threshold quantity (lbs) | Basis for listing |
|------------|---|--------------------------|-------------------|
| 594-42-3 | Perchloromethylmercaptan [Methanesulphenyl chloride, trichloro-] | 10,000 | b |
| 624-83-9 | Methyl isocyanate [Methane, isocyanato-] | 10,000 | a, b |
| 814-68-6 | Acrylyl chloride [2-Propenoyl chloride] | 5,000 | b |
| 4170-30-3 | Crotonaldehyde [2-Butenal] | 20,000 | b |
| 7446-09-5 | Sulfur dioxide (anhydrous) | 5,000 | a, b |
| 7446-11-9 | Sulfur trioxide | 10,000 | a, b |
| 7550-45-0 | Titanium tetrachloride [Titanium chloride (TiCl ₄) (T-4)-] | 2,500 | b |
| 7637-07-2 | Boron trifluoride [Borane, trifluoro-] | 5,000 | b |
| 7647-01-0 | Hydrochloric acid (conc 37% or greater) | 15,000 | d |
| 7647-01-0 | Hydrogen chloride (anhydrous) [Hydrochloric acid] | 5,000 | a |
| 7664-39-3 | Hydrogen fluoride (conc 50% or greater) [Hydrofluoric acid] | 1,000 | a, b |
| 7664-41-7 | Ammonia (anhydrous) | 10,000 | a, b |
| 7664-41-7 | Ammonia (conc 20% or greater) | 20,000 | a, b |
| 7697-37-2 | Nitric acid (conc 80% or greater) | 15,000 | b |
| 7719-12-2 | Phosphorus trichloride | 15,000 | b |
| 7726-95-6 | Bromine | 10,000 | a, b |
| 7782-41-4 | Fluorine | 1,000 | b |
| 7782-50-5 | Chlorine | 2,500 | a, b |
| 7783-06-4 | Hydrogen sulfide | 10,000 | a, b |
| 7783-07-5 | Hydrogen selenide | 500 | b |
| 7783-60-0 | Sulfur tetrafluoride [Sulfur fluoride (SF ₄), (T-4)-] | 2,500 | b |
| 7784-34-1 | Arsenous trichloride | 15,000 | b |
| 7784-42-1 | Arsine | 1,000 | b |
| 7803-51-2 | Phosphine | 5,000 | b |
| 8014-95-7 | Oleum (Fuming Sulfuric acid) [Sulfuric acid, mixture with sulfur trioxide] ¹ | 10,000 | e |
| 10025-87-3 | Phosphorus oxychloride [Phosphoryl chloride] | 5,000 | b |
| 10049-04-4 | Chlorine dioxide [Chlorine oxide (ClO ₂)] | 1,000 | c |
| 10102-43-9 | Nitric oxide [Nitrogen oxide (NO)] | 10,000 | b |
| 10294-34-5 | Boron trichloride [Borane, trichloro-] | 5,000 | b |
| 13463-39-3 | Nickel carbonyl | 1,000 | B |
| 13463-40-6 | Iron, pentacarbonyl- [Iron carbonyl (Fe(CO) ₅), (TB-5-11)-] | 2,500 | b |
| 19287-45-7 | Diborane | 2,500 | b |
| 26471-62-5 | Toluene diisocyanate (unspecified isomer) [Benzene,1,3-diisocyanatomethyl-1] ¹ | 10,000 | a |

¹ The mixture exemption in 40 CFR 68.115(b)(1) does not apply to the substance.

Note: Basis for Listing:

- a Mandated for listing by Congress.
- b On EHS list, vapor pressure 10 mmHg or greater.
- c Toxic gas.
- d Toxicity of hydrogen chloride, potential to release hydrogen chloride, and history of accidents.
- e Toxicity of sulfur trioxide and sulfuric acid, potential to release sulfur trioxide, and history of accidents.

Table B-3

LIST OF REGULATED FLAMMABLE¹ SUBSTANCES AND THRESHOLD QUANTITIES - by alpha

| CAS No. | Chemical name | Threshold quantity (lbs) | Basis for listing |
|------------|--|--------------------------|-------------------|
| 75-07-0 | Acetaldehyde | 10,000 | g |
| 74-86-2 | Acetylene [Ethyne] | 10,000 | f |
| 598-73-2 | Bromotrifluoroethylene [Ethene, bromotrifluoro-] | 10,000 | f |
| 106-99-0 | 1,3-Butadiene | 10,000 | f |
| 106-97-8 | Butane | 10,000 | f |
| 25167-67-3 | Butene | 10,000 | f |
| 106-98-9 | 1-Butene | 10,000 | f |
| 107-01-7 | 2-Butene | 10,000 | f |
| 590-18-1 | 2-Butene-cis | 10,000 | f |
| 624-64-6 | 2-Butene-trans [2-Butene, (E)] | 10,000 | f |
| 463-58-1 | Carbon oxysulfide [Carbon oxide sulfide (COS)] | 10,000 | f |
| 7791-21-1 | Chlorine monoxide [Chlorine oxide] | 10,000 | f |
| 590-21-6 | 1-Chloropropylene [1-Propene, 1-chloro-] | 10,000 | g |
| 557-98-2 | 2-Chloropropylene [1-Propene, 2-chloro-] | 10,000 | g |
| 460-19-5 | Cyanogen [Ethanedinitrile] | 10,000 | f |
| 75-19-4 | Cyclopropane | 10,000 | f |
| 4109-96-0 | Dichlorosilane [Silane, dichloro-] | 10,000 | f |
| 75-37-6 | Difluoroethane [Ethane, 1,1-difluoro-] | 10,000 | f |
| 124-40-3 | Dimethylamine [Methanamine, N-methyl-] | 10,000 | f |
| 463-82-1 | 2,2-Dimethylpropane [Propane, 2,2-dimethyl-] | 10,000 | f |
| 74-84-0 | Ethane | 10,000 | f |
| 107-00-6 | Ethyl acetylene [1-Butyne] | 10,000 | f |
| 75-00-3 | Ethyl chloride [Ethane, chloro-] | 10,000 | f |
| 60-29-7 | Ethyl ether [Ethane, 1,1'-oxybis-] | 10,000 | g |
| 75-08-1 | Ethyl mercaptan [Ethanethiol] | 10,000 | g |
| 109-95-5 | Ethyl nitrite [Nitrous acid, ethyl ester] | 10,000 | f |
| 75-04-7 | Ethylamine [Ethanamine] | 10,000 | f |
| 74-85-1 | Ethylene [Ethene] | 10,000 | f |
| 1333-74-0 | Hydrogen | 10,000 | f |
| 75-28-5 | Isobutane [Propane, 2-methyl-] | 10,000 | f |
| 78-78-4 | Isopentane [Butane, 2-methyl-] | 10,000 | g |
| 78-79-5 | Isoprene [1,3-Butadiene, 2-methyl-] | 10,000 | g |
| 75-29-6 | Isopropyl chloride [Propane, 2-chloro-] | 10,000 | g |
| 75-31-0 | Isopropylamine [2-Propanamine] | 10,000 | g |
| 74-82-8 | Methane | 10,000 | f |
| 74-89-5 | Methylamine [Methanamine] | 10,000 | f |
| 563-46-2 | 2-Methyl-1-butene | 10,000 | g |
| 563-45-1 | 3-Methyl-1-butene | 10,000 | f |
| 115-10-6 | Methyl ether [Methane, oxybis-] | 10,000 | f |
| 107-31-3 | Methyl formate [Formic acid, methyl ester] | 10,000 | g |
| 115-11-7 | 2-Methylpropene [1-Propene, 2-methyl-] | 10,000 | f |
| 504-60-9 | 1,3-Pentadiene | 10,000 | f |
| 109-66-0 | Pentane | 10,000 | g |
| 109-67-1 | 1-Pentene | 10,000 | g |

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Appendix B: Accidental Release Prevention

| CAS No. | Chemical name | Threshold quantity (lbs) | Basis for listing |
|------------|--|--------------------------|-------------------|
| 646-04-8 | 2-Pentene, (E)- | 10,000 | g |
| 627-20-3 | 2-Pentene, (Z)- | 10,000 | g |
| 463-49-0 | Propadiene [1,2-Propadiene] | 10,000 | f |
| 74-98-6 | Propane | 10,000 | f |
| 115-07-1 | Propylene [1-Propene] | 10,000 | f |
| 74-99-7 | Propyne [1-Propyne] | 10,000 | f |
| 7803-62-5 | Silane | 10,000 | f |
| 116-14-3 | Tetrafluoroethylene [Ethene, tetrafluoro-] | 10,000 | f |
| 75-76-3 | Tetramethylsilane [Silane, tetramethyl-] | 10,000 | g |
| 10025-78-2 | Trichlorosilane [Silane, trichloro-] | 10,000 | g |
| 79-38-9 | Trifluorochloroethylene [Ethene, chlorotrifluoro-] | 10,000 | f |
| 75-50-3 | Trimethylamine [Methanamine, N,N-dimethyl-] | 10,000 | f |
| 689-97-4 | Vinyl acetylene [1-Buten-3-yne] | 10,000 | f |
| 75-01-4 | Vinyl chloride [Ethene, chloro-] | 10,000 | a,f |
| 109-92-2 | Vinyl ethyl ether [Ethene, ethoxy-] | 10,000 | g |
| 75-02-5 | Vinyl fluoride [Ethene, fluoro-] | 10,000 | f |
| 107-25-5 | Vinyl methyl ether [Ethene, methoxy-] | 10,000 | f |
| 75-35-4 | Vinylidene chloride [Ethene, 1,1-dichloro-] | 10,000 | g |
| 75-38-7 | Vinylidene fluoride [Ethene, 1,1-difluoro-] | 10,000 | f |

1 A flammable substance when used as a fuel or held for sale as a fuel at a retail facility is excluded from all provisions of this part (see 40 CFR 68.126).

Note: Basis for Listing:

a Mandated for listing by Congress.

f Flammable gas.

g Volatile flammable liquid.

Table B-4

LIST OF REGULATED FLAMMABLE¹ SUBSTANCES AND THRESHOLD QUANTITIES - by CAS Number

| CAS No. | Chemical name | Threshold quantity (lbs) | Basis for listing |
|----------------|--|---------------------------------|--------------------------|
| 60-29-7 | Ethyl ether [Ethane, 1,1'-oxybis-] | 10,000 | g |
| 74-82-8 | Methane | 10,000 | f |
| 74-84-0 | Ethane | 10,000 | f |
| 74-85-1 | Ethylene [Ethene] | 10,000 | f |
| 74-86-2 | Acetylene [Ethyne] | 10,000 | f |
| 74-89-5 | Methylamine [Methanamine] | 10,000 | f |
| 74-98-6 | Propane | 10,000 | f |
| 74-99-7 | Propyne [1-Propyne] | 10,000 | f |
| 75-00-3 | Ethyl chloride [Ethane, chloro-] | 10,000 | f |
| 75-01-4 | Vinyl chloride [Ethene, chloro-] | 10,000 | a,f |
| 75-02-5 | Vinyl fluoride [Ethene, fluoro-] | 10,000 | f |
| 75-04-7 | Ethylamine [Ethanamine] | 10,000 | f |
| 75-07-0 | Acetaldehyde | 10,000 | g |
| 75-08-1 | Ethyl mercaptan [Ethanethiol] | 10,000 | g |
| 75-19-4 | Cyclopropane | 10,000 | f |
| 75-28-5 | Isobutane [Propane, 2-methyl-] | 10,000 | f |
| 75-29-6 | Isopropyl chloride [Propane, 2-chloro-] | 10,000 | g |
| 75-31-0 | Isopropylamine [2-Propanamine] | 10,000 | g |
| 75-35-4 | Vinylidene chloride [Ethene, 1,1-dichloro-] | 10,000 | g |
| 75-37-6 | Difluoroethane [Ethane, 1,1-difluoro-] | 10,000 | f |
| 75-38-7 | Vinylidene fluoride [Ethene, 1,1-difluoro-] | 10,000 | f |
| 75-50-3 | Trimethylamine [Methanamine, N,N-dimethyl-] | 10,000 | f |
| 75-76-3 | Tetramethylsilane [Silane, tetramethyl-] | 10,000 | g |
| 78-78-4 | Isopentane [Butane, 2-methyl-] | 10,000 | g |
| 78-79-5 | Isoprene [1,3-Butadiene, 2-methyl-] | 10,000 | g |
| 79-38-9 | Trifluorochloroethylene [Ethene, chlorotrifluoro-] | 10,000 | f |
| 106-97-8 | Butane | 10,000 | f |
| 106-98-9 | 1-Butene | 10,000 | f |
| 106-99-0 | 1,3-Butadiene | 10,000 | f |
| 107-00-6 | Ethyl acetylene [1-Butyne] | 10,000 | f |
| 107-01-7 | 2-Butene | 10,000 | f |
| 107-25-5 | Vinyl methyl ether [Ethene, methoxy-] | 10,000 | f |
| 107-31-3 | Methyl formate [Formic acid, methyl ester] | 10,000 | g |
| 109-66-0 | Pentane | 10,000 | g |
| 109-67-1 | 1-Pentene | 10,000 | g |
| 109-92-2 | Vinyl ethyl ether [Ethene, ethoxy-] | 10,000 | g |
| 109-95-5 | Ethyl nitrite [Nitrous acid, ethyl ester] | 10,000 | f |
| 115-07-1 | Propylene [1-Propene] | 10,000 | f |
| 115-10-6 | Methyl ether [Methane, oxybis-] | 10,000 | f |
| 115-11-7 | 2-Methylpropene [1-Propene, 2-methyl-] | 10,000 | f |
| 116-14-3 | Tetrafluoroethylene [Ethene, tetrafluoro-] | 10,000 | f |
| 124-40-3 | Dimethylamine [Methanamine, N-methyl-] | 10,000 | f |
| 460-19-5 | Cyanogen [Ethanedinitrile] | 10,000 | f |
| 463-49-0 | Propadiene [1,2-Propadiene] | 10,000 | f |
| 463-58-1 | Carbon oxysulfide [Carbon oxide sulfide (COS)] | 10,000 | f |

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| CAS No. | Chemical name | Threshold quantity (lbs) | Basis for listing |
|------------|---|--------------------------|-------------------|
| 463-82-1 | 2,2-Dimethylpropane [Propane, 2,2-dimethyl-] | 10,000 | f |
| 504-60-9 | 1,3-Pentadiene | 10,000 | f |
| 557-98-2 | 2-Chloropropylene [1-Propene, 2-chloro-] | 10,000 | g |
| 563-45-1 | 3-Methyl-1-butene | 10,000 | f |
| 563-46-2 | 2-Methyl-1-butene | 10,000 | g |
| 590-18-1 | 2-Butene-cis | 10,000 | f |
| 590-21-6 | 1-Chloropropylene [1-Propene, 1-chloro-] | 10,000 | g |
| 598-73-2 | Bromotrifluorethylene [Ethene, bromotrifluoro-] | 10,000 | f |
| 624-64-6 | 2-Butene-trans [2-Butene, (E)] | 10,000 | f |
| 627-20-3 | 2-Pentene, (Z)- | 10,000 | g |
| 646-04-8 | 2-Pentene, (E)- | 10,000 | g |
| 689-97-4 | Vinyl acetylene [1-Buten-3-yne] | 10,000 | f |
| 1333-74-0 | Hydrogen | 10,000 | f |
| 4109-96-0 | Dichlorosilane [Silane, dichloro-] | 10,000 | f |
| 7791-21-1 | Chlorine monoxide [Chlorine oxide] | 10,000 | f |
| 7803-62-5 | Silane | 10,000 | f |
| 10025-78-2 | Trichlorosilane [Silane, trichloro-] | 10,000 | g |
| 25167-67-3 | Butene | 10,000 | f |

1 A flammable substance when used as a fuel or held for sale as a fuel at a retail facility is excluded from all provisions of this part (see 40 CFR 68.126).

Note: Basis for Listing:

- a Mandated for listing by Congress.
- f Flammable gas.
- g Volatile flammable liquid.

Appendix C: Part 61 NESHAP Reference List

| Pollutant | Facility or Emission Unit type | Iowa Rules 567 IAC | 40 CFR 61 Subpart |
|--|---|-------------------------|----------------------|
| RADON | Underground Uranium Mines; Department of Energy Facilities; Phosphorus Fertilizer Plants; and Facilities processing or disposing of Uranium ore and tailings | Federal Only | B, Q, R, T, W |
| BERYLLIUM | Beryllium Extraction Plants; Ceramic Plants, Foundries, Incinerators, Propellant Plants, and Machine Shops that process Beryllium containing material; and Rocket Motor Firing Test Sites | 23.1(3)"b" and "c" | C, D |
| MERCURY | Mercury Ore Processing; Manufacturing Processes using Mercury Chlor-alkali Cells; Sludge Incinerators; and Sludge Drying Plants | 23.1(3)"d" | E |
| VINYL CHLORIDE | Ethylene Dichloride Manufacturing via Oxygen, HCl and Ethylene; Vinyl Chloride Manufacturing; and Polyvinyl Chloride Manufacturing | 23.1(3)"e" | F |
| RADIO-NUCLIDES | Department of Energy; Nuclear Regulatory Commission Licensed Facilities; Other Federal Facilities; and Elemental Phosphorus Plants | Federal Only | H, I, K |
| BENZENE | Fugitive Process, Storage, and Transfer Equipment Leaks; Coke By-Product Recovery Plants; Benzene Storage Vessels; Benzene Transfer Operations; and Benzene Waste Operations | 23.1(3)"f" and "k-n" | J, L, Y, BB, FF |
| ASBESTOS | Asbestos Mills; Roadway Surfacing with Asbestos Tailings; Manufacture of products containing Asbestos; Demolition; Renovation; and Spraying and Disposal of Asbestos Waste | 23.1(3)"a" | M |
| INORGANIC ARSENIC | Glass manufacturer; Primary Copper Smelter; Arsenic Trioxide and Metallic Arsenic Production Facilities | 23.1(3)"h", "i" and "j" | P, N, O |
| VOLATILE HAZARDOUS AIR POLLUTANTS (VHAP) | Pumps, Compressors, Pressure Relief Devices, Connections, Valves, Lines, Flanges, Product Accumulator Vessels, etc. in VHAP Service | 23.1(3)"g" | V |

Appendix D: Stratospheric Ozone Depleting Chemicals

A. Class I

| 1. Group I | Chemical | CAS Number |
|---------------|--|------------|
| | CFC1 ₃ -Trichlorofluoromethane (CFC-11) | |
| | CF ₂ Cl ₂ -Dichlorodifluoromethane (CFC-12) | 75-43-4 |
| | C ₂ F ₃ Cl ₃ -Trichlorotrifluoroethane (CF-113) | 76-13-1 |
| | C ₂ F ₄ Cl ₂ -Dichlorotetrafluoroethane (CFC-114) | 76-14-2 |
| | C ₂ F ₅ Cl-Monochloropentafluoroethane(CFC-115) | |
| | All isomers of the above chemicals | |
| 2. Group II: | Chemical | CAS Number |
| | CF ₂ ClBr-Bromochlorodifluoromethane (Halon-1211) | 353-59-3 |
| | CF ₃ Br-Bromotrifluoroethane (Halon - 1301) | 598-73-2 |
| | C ₂ F ₄ Br ₂ -Dibromotetrafluoroethane (Halon-2402) | 124-73-2 |
| | All isomers of the above chemicals | |
| 3. Group III | Chemical | CAS Number |
| | CF ₃ Cl-Chlorotrifluoromethane (CFC-13) | 75-72-9 |
| | C ₂ FCl ₅ -(CFC-111) | |
| | C ₂ F ₂ Cl ₄ -(CFC-112) | |
| | C ₃ FCl ₇ -(CFC-211) | |
| | C ₃ F ₂ Cl ₆ -(CFC-212) | |
| | C ₃ F ₃ Cl ₅ -(CFC-213) | |
| | C ₃ F ₄ Cl ₄ -(CFC-214) | |
| | C ₃ F ₅ Cl ₃ -(CFC-215) | |
| | C ₃ F ₆ Cl ₂ -(CFC-216) | |
| | C ₃ F ₇ Cl-(CFC-217) | |
| | All isomers of the above chemicals | |
| 4. Group IV: | Chemical | CAS Number |
| | CCl ₄ -Carbon tetrachloride | 56-23-5 |
| 5. Group V: | Chemical | CAS Number |
| | C ₂ H ₃ Cl ₃ -1,1,1 trichloroethane (Methyl chloroform) | 71-55-6 |
| | All isomers of the above chemical except 1,1,2 trichloroethane | |
| 6. Group VI. | Chemical | CAS Number |
| | CH ₃ Br-Bromomethane (Methyl Bromide) | 74-83-9 |
| 7. Group VII. | Chemical | |
| | CH ₂ Br ₂ | |
| | CHF ₂ Br (HBFC-22B1) | |
| | CH ₂ FBr | |
| | C ₂ HFBr ₄ | |
| | C ₂ HF ₂ Br ₃ | |
| | C ₂ HF ₃ Br ₂ | |
| | C ₂ HF ₄ Br | |
| | C ₂ H ₂ FBr ₃ | |

C₂H₂F₂Br₂
C₂H₂F₃Br
C₂H₃FBr₂
C₂H₃F₂Br
C₂H₄FBr
C₃HFBr₆
C₃HF₂Br₅
C₃HF₃Br₄
C₃HF₄Br₃
C₃HF₅Br₂
C₃HF₆Br
C₃H₂FBr₅
C₃H₂F₃Br₄
C₃H₂F₃Br₃
C₃H₂F₄Br₂
C₃H₂F₅Br
C₃H₃FBr₄
C₃H₃F₂Br₃
C₃H₃F₃Br₂
C₃H₃F₄Br
C₃H₄FBr₃
C₃H₄F₂Br₂
C₃H₄F₃Br
C₃H₅FBr₂
C₃H₅F₂Br
C₃H₆FBr

8. Group VIII. Chemical
CH₂BrCl (Chlorobromomethane)

B. Class II

| Chemical | CAS Number |
|--|-------------------|
| CHFCI ₂ -Dichlorofluoromethane (HCFC-21) | 75-43-4 |
| CHF ₂ CI-Chlorodifluoromethane (HCFC-22) | 75-45-6 |
| C ₂ HFCI-Chlorofluoromethane (HCFC-31) | |
| C ₂ HFCI ₄ -(HCFC-121) | |
| C ₂ HF ₂ CI ₃ -(HCFC-122) | |
| C ₂ HF ₃ CI ₂ -2, 2-Dichloro-1, 1, 1-trifluoroethane (HCFC-123) | 306-83-2 |
| C ₂ HF ₄ CI-1-Chloro-1, 1, 1, 2-tetrafluoroethane (HCFC-124) | 2873-89-0 |
| C ₂ H ₂ FCI ₃ -(HCFC-131) | |
| C ₂ H ₂ F ₂ CI ₂ -(HCFC-132) | |
| C ₂ H ₂ F ₃ CI-(HCFC-133) | |
| C ₂ H ₃ FCI ₂ -1, 1-Dichloro-1-fluoroethane (HCFC-141b) | 1717-00-6 |
| C ₂ H ₃ F ₂ CI-1-Chloro-1, 1-difluoroethane (HCFC-142b) | 75-68-3 |
| C ₂ H ₄ FCI-Chlorofluoroethane (HCFC-151) | 110587-14-9 |
| C ₃ HFCI ₄ -(HCFC-221) | |
| C ₃ HF ₂ CI ₅ -(HCFC-222) | |
| C ₃ HF ₃ CI ₄ -(HCFC-223) | |
| C ₃ HF ₄ CI ₃ -(HCFC-224) | |
| C ₃ HF ₅ CI ₂ -(HCFC-225ca) | |
| C ₃ HF ₅ CI ₂ - (HCFC-225cb) | |
| C ₃ HF ₆ CI-(HCFC-226) | |
| C ₃ H ₂ FCI ₅ -(HCFC-231) | |
| C ₃ H ₂ F ₂ CI ₄ -(HCFC-232) | |
| C ₃ H ₂ F ₃ CI ₃ -(HCFC-233) | |
| C ₃ H ₂ F ₅ CI ₂ -(HCFC-234) | |
| C ₃ H ₂ F ₅ CI-(HCFC-235) | |
| C ₃ H ₃ FCI ₄ -(HCFC-241) | |
| C ₃ H ₃ F ₂ CI ₃ -(HCFC-242) | |
| C ₃ H ₃ F ₃ CI ₂ -(HCFC-243) | |
| C ₃ H ₃ F ₄ CI-(HCFC-244) | |
| C ₃ H ₄ FCI ₃ -(HCFC-251) | |
| C ₃ H ₄ F ₂ CI ₂ -(HCFC-252) | |
| C ₃ H ₄ F ₃ CI-(HCFC-253) | |
| C ₃ H ₅ FCI ₂ -(HCFC-261) | |
| C ₃ H ₅ F ₂ CI-(HCFC-262) | |
| C ₃ H ₆ FCI-(HCFC-271) | |

All isomers of the above chemicals

Appendix E: Acid Rain and CSAPR

Acid Rain Program under Title IV

(567 IAC 22.120 - 22.148 *Acid Rain*; 1990 Clean Air Act Sections 401-416)

Utilities and other facilities which combust fossil fuel and generate electricity for wholesale or retail sale may be subject to Acid Rain program requirements, including the requirement to hold an **Acid Rain permit under 40 CFR 72 and 567 IAC 22.122**.

Utilities designated as "Phase I" or "Phase II" sources will need to apply for an Acid Rain permit. Other facilities that may be permitted include certain new units that began commercial operation on or after November 15, 1990, and existing units that increase electric generation from less than 25 megawatts to 25 megawatts or more.

Nationally standardized forms are required for applying for Acid Rain permits or for the Acid Rain portions of the Title V permit application and compliance plans. The compliance plan content requirements (567 IAC 22.105(2)"h" - Standard application form and required information - compliance plan) for Title V operating permit applications apply and must be included in the acid rain portion of the compliance plan of Title IV affected sources (567 IAC 22.105(2)"j").

Certain cogeneration units, qualifying facilities, independent power facilities, and solid waste incinerators may need to apply for a permit. Requirements to apply for an Acid Rain permit are detailed in 567 IAC 22.128. Certain types of units will not be subject to the requirements of the Acid Rain program and are listed in 567 IAC 22.122(2). Other units may be exempted (see 567 IAC 22.123 *Acid Rain Exemptions*). Facilities may petition EPA for an acid rain applicability determination. Petitions must conform to EPA requirements and should be sent by the facility's certifying official to:

Regular or certified mail address:

US EPA
Clean Air Markets Division
1200 Pennsylvania Ave NW
Mail Code 6204M
Washington, DC 20460

Overnight mail address:

Package delivery / Street Address:
US EPA
Clean Air Markets Division
1200 Pennsylvania Ave NW
Washington, DC 20004
Tel: (202) 343-9790

For further information about applying for an applicability determination, call EPA's Clean Air Market at (202) 343-9620.

Acid Rain permits will be required in addition to Title V operating permits. Applicable requirements from the Acid Rain regulations must be included in the Title V operating permit application.

Following is a list of selected Acid Rain regulations that can be obtained by calling the EPA Clean Air Market at (202) 343-9620.

Acid Rain Program: General provisions and permits, allowance system, continuous emission monitoring, excess emissions, and administrative appeals.

- 40 CFR 72 as amended through March 28, 2011
- 40 CFR 73 and 74 as amended through April 28, 2006
- 40 CFR 78 as amended through August 8, 2011
- 40 CFR 75 as amended through January 18, 2012

40 CFR 76 as amended through October 15, 1999
40 CFR 77 as amended through May 12, 2005

Acid Rain Program: Nitrogen oxides emission reduction program.
40 CFR 76 as amended through October 15, 1999

Acid Rain Program: Permits and allowance system (opt-in).
40 CFR 74 as amended through April 28, 2006

Acid Rain Program: Permits and allowance system (substitution & compensating units).
40 CFR 72 as amended through March 28, 2011
40 CFR 73 as amended through April 28, 2006

Cross State Air Pollution Rule (CSAPR, aka Transport Rule)

(567 IAC 22.120 - 22.123 *Acid Rain*; 1990 Clean Air Act Section 110; 40 CFR Part 97, 40 CFR 52.38)

Utilities and other facilities which combust fossil fuel and generate electricity for sale may be subject to CSAPR program requirements, including the requirement to incorporate CSAPR conditions into the Title V permit under 40 CFR 97 subparts AAAAA, BBBBB, and CCCCC.

Applicability:

Any stationary boiler or combustion turbine is a CSAPR affected unit if it burns fossil fuel, has served, on or after January 1, 2005, a generator of greater than 25 MW nameplate capacity that produces electricity for sale, except:

1. A qualifying cogeneration unit and not selling more than one-third of unit's potential electrical output, or 219,000 MWh, whichever is greater on an annual basis; or
2. A qualifying solid waste incineration unit
 - a. throughout the later of 2005 or the 12-month period starting on the date the unit first produces electricity and continuing to qualify as a solid waste incineration unit throughout each calendar year ending after the later of 2005 or such 12-month period; and
 - b. with an average annual fuel consumption of fossil fuel for the first 3 consecutive calendar years of operation starting no earlier than 2005 of less than 20 percent (on a Btu basis) and an average annual fuel consumption of fossil fuel for any 3 consecutive calendar years thereafter of less than 20 percent (on a Btu basis).

Please read 40 CFR 97 subparts AAAAA, BBBBB, and CCCCC for complete applicability information, including retired unit exemptions.

CSAPR Conditions

As explained in the preamble of the CSAPR regulations promulgated on August 8, 2011, the requirements established in the CSAPR trading programs are "applicable requirements" that must be included in a source's Title V permit pursuant to 40 Code of Federal Regulations (CFR) parts 70.

For sources with existing Title V permits, permitting authorities should incorporate CSAPR applicable requirements in accordance with the procedures in the approved operating permit program, as applicable to the specific permit. Such procedures include the permit renewal provisions at 40 CFR § 70.7(c), the reopening for cause provisions at 40 CFR § 70.7(f), and the significant permit modification provisions at 40 CFR § 70.7(e)(4). For sources that become newly subject to Title V permitting, the initial permit issued pursuant to 40 CFR § 70.7(a) will need to include the CSAPR applicable requirements.

Appendix F: Prevention of Significant Deterioration (PSD) Information Worksheet

(567 IAC 22.4 Special requirements for major stationary sources located in areas designated attainment or unclassified (PSD) and 567 IAC Chapter 33: Special Regulations and Construction Permit Requirements for Major Stationary Sources – Prevention of Significant Deterioration (PSD) of Air Quality; PSD 40 CFR 52.21)

The State of Iowa has committed to establishing and maintaining National Ambient Air Quality Standards (NAAQS). A plan is set forth (as described in 40 CFR 52 subparts A and Q) for the state to prevent the significant deterioration (PSD) of air quality in any portion of the State where the existing air quality is better than the NAAQS. Included in this plan, and reflected in state rule (567 IAC chapters 20-35), are requirements for air pollution sources to undergo review and obtain permits to construct and modify air pollution sources.

This worksheet will assist in determining whether a facility may be considered to be a “major stationary source” of air pollution and subject to PSD review as a part of Iowa's air quality permitting process.

Sources which are not considered to be major stationary sources may still be subject to air permitting review. The construction and modification of air contaminant sources in Iowa are regulated under Code of Iowa Chapter 455B and 567 Iowa Administrative Code chapters 20 - 35.

If, after completing this worksheet, it is determined that the facility is a major stationary source or it is unsure if the facility is subject to PSD - read and become familiar with the requirements of:

- 40 CFR 52.21 Subpart A (General Provisions) and,
- 40 CFR 52 Subpart Q (Iowa)
- 567 Iowa Administrative Code section 22.4 and chapter 33

- 1) Is the facility defined as one of the following source categories? (Some SIC codes applying to specific categories are given in parentheses). Please indicate the categories the facility belongs to by checking the boxes next to the category numbers in the table.

| SOURCE CATEGORY | SIC | SOURCE CATEGORY | SIC |
|--|--------------|---|--------------|
| 1 <input type="checkbox"/> Fossil fuel-fired steam electric plants of more than 250 MMBtu/hr | | 15 <input type="checkbox"/> Phosphate rock processing plants | (1475) |
| 2 <input type="checkbox"/> Coal cleaning plants (with thermal dryers) | | 16 <input type="checkbox"/> Coke oven batteries | (3312) |
| 3 <input type="checkbox"/> Kraft pulp mills | (2611, 2621) | 17 <input type="checkbox"/> Sulfur recovery plants | (2819) |
| 4 <input type="checkbox"/> Portland cement plants | (3241) | 18 <input type="checkbox"/> Carbon black plants (furnace process) | (2895) |
| 5 <input type="checkbox"/> Primary zinc smelters | (3339) | 19 <input type="checkbox"/> Primary lead smelters | (3339) |
| 6 <input type="checkbox"/> Iron and steel mills | (332x) | 20 <input type="checkbox"/> Fuel conversion plants | |
| 7 <input type="checkbox"/> Primary aluminum ore reduction plants | (3334) | 21 <input type="checkbox"/> Sintering plants | |
| 8 <input type="checkbox"/> Primary copper smelters | (3331) | 22 <input type="checkbox"/> Secondary metal production plants | (334x) |
| 9 <input type="checkbox"/> Municipal incinerators capable of charging more than 250 tons of refuse per day | | 23 <input type="checkbox"/> Chemical process plants (*) | (28xx) |
| 10 <input type="checkbox"/> Hydrofluoric acid plants | (2819, 2899) | 24 <input type="checkbox"/> Fossil-fuel boilers (or combination thereof) totaling more than 250 MMBtu/hr | |
| 11 <input type="checkbox"/> Sulfuric acid plants | (2819) | 25 <input type="checkbox"/> Petroleum storage & transfer units, total storage capacity over 300,000 barrels | |
| 12 <input type="checkbox"/> Nitric acid plants | (2873) | 26 <input type="checkbox"/> Taconite ore processing plants | (1011) |
| 13 <input type="checkbox"/> Petroleum refineries | (2911) | 27 <input type="checkbox"/> Glass fiber processing plants | |
| 14 <input type="checkbox"/> Lime plants | (3274) | 28 <input type="checkbox"/> Charcoal production plants | (2819, 2861) |

(*) Excluding ethanol production facilities that produce ethanol by natural fermentation included in NAICS codes 325193 or 312140.

- ☐ NO, this facility is not classified as one of the 28 listed source categories. Go to question 2.
☐ YES, this facility is classified as one of the 28 listed source categories. An air emission source that is classified as one of the 28 sources listed above, and having a potential to emit of 100 tons per year or more of any single regulated pollutant is considered a "Major Stationary Source"

- 2) Facilities not defined by the 28 source categories listed above and located in attainment areas are considered to be a major stationary source if the source has a potential to emit more than 250 tpy of any single regulated pollutant. Review the current PTE of the entire facility for each regulated pollutant (information from Part 1 Form 1.5 Potential Emissions - Significant Activities).

Is the current PTE of the facility greater than or equal to the 100/250 tpy threshold for the facility, making the facility a major stationary source?

- ☐ NO, this facility is not a major stationary source and therefore is not presently subject to PSD requirements.
☐ YES, this facility is currently considered a major stationary source for PSD purpose.

Appendix G: Proposed Limits and Alternative Operating Scenarios

Proposed Limits

Proposals for establishing operating limits on emissions (e.g. hours of operation or product throughput) or on the mode of operation of an emission unit(s), and/or control equipment should be submitted with the information outlined below. Due to the complex nature of evaluating and setting alternative limits, additional information may be required upon review.

Any proposals for establishing or modifying limits on emissions or operations may not be a relaxation of any requirement in an existing permit, judicial consent decree, administrative order, or rule.

Proposed limitations may not be used as a basis for establishing the applicability of any requirement until AFTER the DNR has incorporated the limitation into a permit.

Proposals for emission limitations (e.g. pound per hour (lb/hr) or grains per standard cubic feet (gr/scf)) should be done through the construction permits section of the Air Quality Bureau. The construction permits section performs National Ambient Air Quality Standard (NAAQS) evaluations on this type of emission limits. This type of evaluation is beyond the scope of the reviews performed by the Title V operating permits section as mandated by 40 CFR 70.

Because the material submitted for the emission limitation proposal is just a proposal when the application is submitted it is not federally enforceable until it is incorporated into a permit. Therefore, the proposed limitations cannot be used to limit the emission potentials and affect program applicability determination when the application is submitted.

Alternative Operating Scenarios

Proposals for reasonably anticipated operating scenarios may be included in the permit application. Two primary guidelines provided for alternative operating scenarios follow:

First, any proposals for establishing alternative operating scenarios may not be a relaxation of any requirement in an existing permit, judicial consent decree, administrative order, or rule.

Second, the proposal must also include a statement that the source shall, contemporaneously with making a change from one operating scenario to another, record in a log at the permitted facility a record of the scenario under which it is operating.

Early Reduction

Facilities that do not already have a federally enforceable Hazardous Air Pollutant (HAP) early reduction commitment in place must follow the guidelines as set forth in 40 CFR 63, Subpart D, as amended through November 21, 1994.

The Clean Air Act Amendments of 1990 Section 112(i)(5) provides that an existing source may obtain a six-year extension to compliance requirements with an emission standard promulgated under Section 112(d) if the source has achieved and demonstrated a reduction of 90 percent (95% for particulate HAPs) or more in emissions of hazardous air pollutants prior to the proposal of an applicable 112(d) standard. Please read 40 CFR 63 subpart D for detailed qualifications for early reductions.

To ensure continued achievement of the emission reduction, a federally enforceable emission limitation, reflecting the reduction, can be established for the source in a Title V operating permit.

If the source is proposing an early reduction program, attach the information required in 40 CFR 63, Subpart D.

Required Documentation

For any Proposed Limits and/or Alternative Operations Scenarios, submit a written summary of the proposed limits. Include a table of contents for all materials submitted in support of the proposal.

Appendix H: NSPS Reference List

Standards of Performance for New Stationary Sources and Emissions Guidelines for Existing Sources

| Source Categories subject to NSPS | 567 IAC 23.1(5) | Effective date of Construction, Modification or Reconstruction | 40 CFR 60 Subpart |
|---|-----------------|--|---------------------|
| Municipal solid waste landfills – Emissions Guidelines & Compliance Times | "a" | Before: 05/30/91 | Cc |
| Municipal solid waste landfills – Emissions Guidelines & Compliance Times | | On or Before 7/17/2014 | Cf |
| Commercial and Industrial Solid Waste Incineration Units - Emissions Guidelines and Compliance Times | "c" | On or Before 11/30/99 | Part 62 Subpart III |
| Commercial and Industrial Solid Waste Incineration Units - Emissions Guidelines and Compliance Times | | See rule for details | DDDD |
| Sewage Sludge Incineration Units - Emission Guidelines and Compliance Times | | On or Before 10/14/2010 | MMMM |
| Emission Guidelines for Greenhouse Gas Emissions and Compliance Times for Electric Utility Generating Units | | On or Before 1/8/2014 | UUUU |

| Source Categories subject to NSPS | 567 IAC 23.1(2) | Effective date of Construction, Modification or Reconstruction | 40 CFR 60 Subpart |
|---|-----------------|--|-------------------|
| Fossil fuel-fired steam generators >250 MMBtu/hr not covered under 40 CFR 60 subparts Da, or Db (after 06/19/86) | "a" | After: 08/17/71 | D |
| Electric utility steam generators >250 MMBtu/hr Combined cycle gas turbines > 250 MMBtu/hr not covered under 40 CFR 60 subpart KKKK | "z" | After: 09/18/78 (generators) After: 02/28/05 (turbines) | Da |
| Industrial-commercial-institutional steam generators > 100 MMBtu/hr not covered under 40 CFR 60 subparts Da, Ea, Eb, GG (heat recovery), AAAA, or KKKK (heat recovery) | "ccc" | After: 06/19/84 | Db |
| Industrial-commercial-institutional steam generators ≥ 10 MMBtu but ≤ 100 MMBtu/hr not covered under 40 CFR 60 subparts GG (heat recovery), AAAA, or KKKK (heat recovery) | "lll" | After: 06/09/89 | Dc |
| Incinerators > 50 tons/day not covered under 40 CFR 60 subparts Cb, Eb, AAAA, or BBBB | "b" | After: 08/17/71 | E |
| Municipal waste combustors > 250 tons/day not covered by 40 CFR 60 subpart Eb | "nnn" | After: 12/20/89 and on or before 09/20/94 | Ea |
| Large municipal waste combustors > 250 tons/day | "sss" | After: 09/20/94 | Eb |
| Portland cement plants | "c" | After: 08/17/71 | F |
| Nitric acid plants | "d" | After: 08/17/71 and on or before 10/14/11 | G |
| Nitric acid plants | | After 10/14/11 | Ga |
| Sulfuric acid plants | "e" | After: 08/17/71 | H |
| Asphalt concrete plants | "f" | After: 6/11/73 | I |
| Petroleum refineries | "g" | After: 6/11/73 | J |
| Petroleum storage vessels with capacity > 40,000 gallons | "bb" | After: 6/11/73 and prior to 5/19/78 | K |

| Source Categories subject to NSPS | 567 IAC 23.1(2) | Effective date of Construction, Modification or Reconstruction | 40 CFR 60 Subpart |
|--|------------------------|---|--------------------------|
| Petroleum storage vessels with capacity > 40,000 gallons | "cc" | After: 5/18/78 and prior to 7/23/84 | Ka |
| Volatile organic liquid storage vessels (including petroleum liquids) | "ddd" | After: 07/23/84 | Kb |
| Secondary lead smelters | "h" | After: 06/11/73 | L |
| Secondary brass and bronze production plants | "i" | After: 06/11/73 | M |
| Oxygen process furnaces | "j" | After: 06/11/73 | N |
| Oxygen process steelmaking facilities | "yy" | After: 01/20/83 | Na |
| Sewage treatment plants | "k" | After: 06/11/73 | O |
| Primary copper smelters | "m" | After: 10/16/74 | P |
| Primary zinc smelters | "n" | After: 10/16/74 | Q |
| Primary lead smelters | "o" | After: 10/16/74 | R |
| Primary aluminum reduction plants | "p" | After: 10/23/74 | S |
| Wet process phosphoric acid plants in the phosphate fertilizer industry | "q" | After: 10/22/74 | T |
| Superphosphoric acid plants in the phosphate fertilizer industry | "r" | After: 10/22/74 | U |
| Diammonium phosphate plants in the phosphate fertilizer industry | "s" | After: 10/22/74 | V |
| Triple superphosphate plants in the phosphate fertilizer industry | "t" | After: 10/22/74 | W |
| Granular triple superphosphate storage facilities in the phosphate fertilizer industry | "u" | After: 10/22/74 | X |
| Coal preparation plants > 200 tons/day | "v" | After: 10/24/74 | Y |
| Ferroalloy production facilities | "w" | After: 10/21/74 | Z |
| Steel plants | "l" | After 10/21/74 and on or before 8/17/83 | AA |
| Electric arc furnaces and argon-oxygen decarburization vessels | "ww" | After: 08/17/83 | AAa |
| Kraft pulp mills | "x" | After: 09/24/76 | BB |
| Glass manufacturing plants | "dd" | After: 06/15/79 | CC |
| Grain elevators | "ooo" | After: 08/03/78 and on or before 7/9/14 | DD |
| Grain elevators | | After: 7/9/14 | DDa |
| Surface coating metal furniture | "gg" | After: 11/28/80 | EE |
| Stationary gas turbines ≥ 10 MMBtu/hr not covered under 40 CFR 60 subpart KKKK | "aa" | After: 10/03/77 | GG |
| Lime manufacturing plants | "y" | After: 05/03/77 | HH |
| Lead-acid battery manufacturing plants | "hh" | After: 01/14/80 | KK |
| Metallic mineral processing plants | "rr" | After: 08/24/82 | LL |
| Automobile and light-duty truck surface coating operations | "ee" | After: 10/05/79 | MM |
| Phosphate rock plants > 4 tons/hr | "ii" | After: 09/21/79 | NN |

| Source Categories subject to NSPS | 567 IAC 23.1(2) | Effective date of Construction, Modification or Reconstruction | 40 CFR 60 Subpart |
|--|-----------------|---|-------------------|
| Ammonium sulfate manufacture | "ff" | After: 02/04/80 | PP |
| Graphic arts industry: publication rotogravure printing | "jj" | After: 08/28/80 | QQ |
| Pressure sensitive tape and label surface coating operations | "qq" | After: 12/30/80 | RR |
| Industrial surface coating: large appliances | "kk" | After: 12/24/80 | SS |
| Metal coil surface coating | "ll" | After: 01/05/81 | TT |
| Asphalt processing and asphalt roofing manufacture | "mm" | After: 11/18/80 | UU |
| Equipment leaks of VOC in the synthetic organic chemicals manufacturing industry | "nn" | After: 01/05/81 and on or before 11/07/06 | VV |
| Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry | | After 11/07/06 | VVa |
| Beverage can surface coating industry | "oo" | After: 11/26/80 | WW |
| Bulk gasoline terminals | "pp" | After: 12/17/80 | XX |
| New residential wood heaters | federal only | After: 07/01/88 | AAA |
| Rubber tire manufacturing industry | "eee" | After: 01/20/83 | BBB |
| VOC emissions from the polymer manufacturing industry | "mmm" | After: 09/30/87 or 01/10/89 (depend on processes, see rule for details) | DDD |
| Flexible vinyl and urethane coating and printing | "uu" | After: 01/18/83 | FFF |
| Equipment leaks of VOC in petroleum refineries not covered under 40 CFR 60 subparts VV, VVa, or KKK | "tt" | After: 01/04/83 and on or before 11/07/06 | GGG |
| Equipment leaks of VOC in petroleum refineries not covered under 40 CFR 60 subparts VV, VVa, GGG, or KKK | | After 11/07/06 | GGGa |
| Synthetic fiber production facilities > 551 tons/year | "ss" | Construction or reconstruction after: 11/23/82 | HHH |
| VOC emissions from synthetic organic chemical manufacturing industry air oxidation unit processes | "jjj" | After: 10/21/83 | III |
| Petroleum dry cleaners (total dryer capacity > 84 pounds) | "vv" | After: 12/14/82 | JJJ |
| Equipment leaks of VOC from on-shore natural gas processing plants not covered under 40 CFR 60 subparts VV or GGG | "zz" | After: 01/20/84 and on or before 8/23/2011 | KKK |
| On shore natural gas processing: SO ₂ emissions | "aaa" | After: 01/20/84 and on or before 8/23/2011 | LLL |
| VOC emissions from synthetic organic chemical manufacturing industry distillation operations | "kkk" | After: 12/30/83 | NNN |
| Nonmetallic mineral processing plants (including sand and gravel processing) not covered under 40 CFR 60 subparts F or I | "bbb" | After: 08/31/83 | OOO |
| Wool fiberglass insulation manufacturing plants | "xx" | After: 02/07/84 | PPP |
| VOC emissions from petroleum refinery wastewater systems | "ggg" | After: 05/04/87 | QQQ |
| VOC emissions from the synthetic organic chemical manufacturing industry (SOCMI) reactor processes not covered under 40 CFR 60 subpart DDD | "qqq" | After: 06/29/90 | RRR |

| Source Categories subject to NSPS | 567 IAC 23.1(2) | Effective date of Construction, Modification or Reconstruction | 40 CFR 60 Subpart |
|---|------------------------|--|--------------------------|
| Magnetic tape coating facilities | "hhh" | After: 01/22/86 | SSS |
| Industrial surface coating: Surface coating of plastic parts for business machines | "fff" | After: 01/08/86 | TTT |
| Calciners and dryers in mineral industries not covered under 40 CFR 60 subpart LL | "ppp" | After: 04/23/86 | UUU |
| Polymeric coating of supporting substrates facilities | "iii" | After: 04/30/87 | VVV |
| Municipal solid waste landfills | "rrr" | On or After: 05/30/91 and before 7/17/14 | WWW |
| Municipal solid waste landfills | | On or After: 7/17/14 | XXX |
| New small municipal waste combustion units ≥ 35 tons/day but ≤ 250 tons/day | "uuu" | Construction after 08/30/99, reconstruction or modification after 06/06/01 | AAAA |
| Commercial and industrial solid waste incineration units not covered under 40 CFR 60 subparts Cb, Ce, Ea, Eb, Ec, O, AAAA, BBBB, MMMM, LLLL, or 40 CFR 63 subpart EEE | "vvv" | Construction after 5/20/11, reconstruction or modification after 9/21/11 | CCCC |
| Other solid waste incineration units not covered under 40 CFR 60 subparts Cb, Ce, Ea, Eb, Ec, CCCC, DDDD, AAAA, BBBB, or 40 CFR 63 subparts EEE, or LLL | "www" | Construction after 12/09/04, reconstruction or modification after 06/16/06 | EEEE |
| Stationary compression ignition internal combustion engines | "yyy" | After 07/11/05 | IIII |
| Stationary spark ignition internal combustion engines | "zzz" | See Rule | JJJJ |
| Stationary combustion turbines ≥ 10 MMBtu/hr | "aaaa" | After 02/18/05 | KKKK |
| New Sewage Sludge Incineration Units | | Construction after 10/14/10, modification after 9/21/11 | LLLL |
| Crude Oil and Natural Gas Production, Transmission and Distribution | | After 8/23/2011 and before 9/18/2015 | OOOO |
| Crude Oil and Natural Gas Facilities | | After 9/18/2015 | OOOOa |
| Standards of Performance for Greenhouse Gas Emissions for Electric Utility Generating Units | | After 1/8/2014 | TTTT |

Appendix I: Part 63 NESHAP Reference List

Table I-1: Categories of Major Sources of Hazardous Air Pollutants Sorted by Industry Group

| INDUSTRY GROUP - Source Category ^a | 40 CFR 63 Subpart | Final Date | Compliance Date ^b |
|---|-------------------|------------|------------------------------------|
| <u>FUEL COMBUSTION</u> | | | |
| Engine Test Cells/Stands (Combined with Rocket Testing Facilities) | PPPPP | 5/27/2003 | See Rule |
| Electric Utility Steam Generating Units (Coal- and Oil-fired) | UUUUU | 2/15/2011 | 4/16/2015 (remanded 6/29/15) |
| Industrial, Commercial & Institutional Boilers and Process Heaters | DDDDD | 3/21/2011 | 3/21/2014 |
| Reciprocating Internal Combustion Engines (RICE) | ZZZZ | 6/15/2004 | See Rule |
| Stationary Combustion Turbines | YYYY | 3/5/2004 | 3/5/2007 |
| <u>NON-FERROUS METALS PROCESSING</u> | | | |
| Primary Aluminum Reduction Plants | LL | 10/07/1997 | 10/07/1999 |
| Primary Copper Smelting | QQQ | 6/12/2002 | 6/12/2005 |
| Primary Lead Smelting | TTT | 6/4/1999 | 5/4/2001 |
| Primary Magnesium Refining | TTTTT | 10/10/2003 | 10/10/2004 |
| Secondary Aluminum Production | RRR | 3/23/2000 | 3/24/2003 |
| Secondary Lead Smelting | X | 6/23/1995 | 6/23/1997 |
| <u>FERROUS METALS PROCESSING</u> | | | |
| Coke Oven Batteries | L | 10/27/93 | Variable |
| Coke Ovens: Pushing, Quenching, & Battery Stacks | CCCCC | 4/14/2003 | 4/14/2006 |
| Ferroalloys Production: Ferromanganese & Silicomanganese | XXX | 5/20/1999 | 5/20/2001 |
| Integrated Iron & Steel Manufacturing Facilities | FFFFF | 5/20/2003 | 5/20/2006 |
| Iron & Steel Foundries | EEEEE | 4/22/2004 | 4/22/2007 |
| Steel Pickling: HCL Process Facilities & Hydrochloric Acid Regeneration Plants | CCC | 6/22/1999 | 6/22/2001 |
| <u>MINERAL PRODUCTS PROCESSING</u> | | | |
| Asphalt Processing & Asphalt Roofing Manufacturing | LLLLL | 4/29/2003 | 5/1/2006 |
| Brick & Structural Clay Products Manufacturing | JJJJJ | 10/26/2015 | 12/26/2018 |
| Clay Ceramics Manufacturing | KKKKK | 5/16/2003 | (vacated) |
| Lime Manufacturing Plants | AAAAA | 1/5/2004 | 1/5/2007 |
| Mineral Wool Production | DDD | 6/01/1999 | 6/01/2002 |
| Portland Cement Manufacturing Industry | LLL | 6/14/1999 | 6/10/2002 |
| Refractory Products Manufacturing (formerly Chromium Refractories) | SSSSS | 4/16/2003 | 4/17/2006 |
| Taconite Iron Ore Processing | RRRRR | 10/30/2003 | 10/30/2006 |
| Wool Fiberglass Manufacturing | NNN | 6/14/1999 | 6/14/2002 |
| <u>PETROLEUM AND NATURAL GAS PRODUCTION AND REFINING</u> | | | |
| Natural Gas Transmission & Storage Facilities | HHH | 06/17/99 | 06/17/02 |
| Oil & Natural Gas Production Facilities | HH | 06/17/99 | 06/17/02 |
| Petroleum Refineries: Catalytic Cracking, Catalytic Reforming & Sulfur Recovery Units | UUU | 4/11/2002 | 4/11/2005 |
| Petroleum Refineries (Other Sources Not Distinctly Listed) | CC | 08/18/95 | 08/18/98 |
| <u>LIQUIDS DISTRIBUTION</u> | | | |
| Gasoline Distribution (Stage 1) | R | 12/14/1994 | 12/15/1997 |
| Marine Vessel Loading Operations | Y | 9/19/1995 | 9/19/1998 |
| Organic Liquids Distribution (non-gasoline) | EEEE | 2/3/2004 | 2/3/2007 |
| <u>SURFACE COATING PROCESSES</u> | | | |
| Aerospace Manufacturing and Rework Facilities | GG | 9/1/1995 | 9/1/1998 |
| Magnetic Tape Manufacturing Operations | EE | 12/15/1994 | 12/15/1996 |

| INDUSTRY GROUP - Source Category ^a | 40 CFR 63 Subpart | Final Date | Compliance Date ^b |
|---|-------------------|------------|------------------------------|
| Paper and Other Web Coating | JJJJ | 12/4/2002 | 12/4/2005 |
| Printing, Coating, and Dyeing of Fabrics and Other Textiles | OOOO | 5/29/2003 | 5/29/2006 |
| Printing and Publishing Industry | KK | 5/30/1996 | 5/30/1999 |
| Surface Coating of Automobiles and Light-Duty Trucks | IIII | 4/26/2004 | 4/26/2007 |
| Surface Coating of Large Appliances | NNNN | 7/23/2002 | 7/23/2005 |
| Surface Coating of Metal Cans | KKKK | 11/13/2003 | 11/13/2006 |
| Surface Coating of Metal Coil | SSSS | 6/10/2002 | 6/10/2005 |
| Surface Coating of Metal Furniture | RRRR | 5/23/2003 | 5/23/2006 |
| Surface Coating of Miscellaneous Metal Parts and Products (includes Asphalt/Coal Tar Application-metal pipes) | MMMM | 1/2/2004 | 1/2/2007 |
| Surface Coating of Plastic Parts and Products | PPPP | 4/19/2004 | 4/19/2007 |
| Surface Coating of Wood Building Products (formerly Flat Wood Paneling Products) | QQQQ | 5/28/2003 | 5/28/2006 |
| Shipbuilding & Ship Repair (Surface Coating) | II | 12/15/1995 | 12/16/1996 |
| Wood Furniture Manufacturing Operations | JJ | 12/7/1995 | 11/21/1997 |
| WASTE TREATMENT AND DISPOSAL | | | |
| Hazardous Waste Combustors | EEE | 9/30/1999 | 9/30/2003 |
| Municipal Solid Waste Landfills | AAAA | 1/16/2003 | See rule |
| Off-Site Waste Recovery Operations | DD | 7/1/1996 | 2/1/2000 |
| Publicly Owned Treatment Works (POTW) | VVV | 10/26/1999 | 10/26/2002 |
| Site Remediation | GGGGG | 10/8/2003 | 10/8/2006 |
| AGRICULTURAL CHEMICALS PRODUCTION | | | |
| Pesticide Active Ingredient Production | | | |
| <ul style="list-style-type: none"> • 4-Chloro-2-Methylphenoxyacetic Acid • 2,4-D Salts & Esters • 4,6-dinitro-o-cresol • Butadiene Furfural Cotrimer (R-11) ^c • Captafol ^c • Captan ^c • Chloroneb • Chlorothalonil ^c • Dacthal (tm) ^c • Sodium Pentachlorophenate • Tordon (tm) Acid ^c | MMM | 6/23/1999 | 12/23/2003 |
| FIBERS PRODUCTION PROCESSES | | | |
| Cellulose Products Manufacturing | | | |
| <ul style="list-style-type: none"> • Cellulose Food Casing • Rayon • Cellulosic Sponge • Cellophane | UUUU | 6/11/2002 | 6/11/2005 |
| Cellulose Ethers Production | | | |
| <ul style="list-style-type: none"> • Caroxymethylcellulose • Methyl cellulose • Cellulose Ethers | | | |
| FOOD AND AGRICULTURE PROCESSES | | | |
| Manufacturing of Nutritional Yeast (formerly Bakers Yeast) | CCCC | 5/21/2001 | 5/21/2004 |
| Solvent Extraction for Vegetable Oil Production | GGGG | 4/12/2001 | 4/12/2004 |
| PHARMACEUTICAL PRODUCTION PROCESSES | | | |
| Pharmaceuticals Production ^c | GGG | 9/21/1998 | 10/21/2002 |
| POLYMERS AND RESINS PRODUCTION | | | |
| Flexible Polyurethane Foam Production | III | 10/7/1998 | 10/08/2001 |
| Polyether Polyols Production | PPP | 6/1/1999 | 6/1/2002 |
| Polymers & Resins I | U | 9/5/1996 | 7/31/1997 |

| INDUSTRY GROUP - Source Category ^a | 40 CFR 63 Subpart | Final Date | Compliance Date ^b |
|---|-----------------------|------------|---|
| <ul style="list-style-type: none"> Butyl Rubber Epichlorohydrin Elastomer Ethylene Propylene Rubber Hypalon (tm) ^c Neoprene Nitrile Butadiene Rubber Polybutadiene Rubber ^c Polysulfide Rubber ^c Styrene Butadiene Rubber & Latex ^c | | | |
| Polymers & Resins II | | | |
| <ul style="list-style-type: none"> Epoxy Resin Non-Nylon Polyamides | W | 3/8/1995 | 3/3/1998 |
| Polymers & Resins III | | | |
| <ul style="list-style-type: none"> Amino Resins Phenolic Resins | OOO | 1/20/2000 | 1/20/2003 |
| Polymers & Resins IV | | | |
| <ul style="list-style-type: none"> Acrylonitrile Butadiene Styrene Resin Methyl Methacrylate Acrylonitrile Butadiene Styrene Resin ^c Methyl Methacrylate Butadiene Styrene Resin ^c Polyethylene Terephthalate Resin Polystyrene Resin Styrene Acrylonitrile Resin Nitrile Resin | JJJ | 9/12/1996 | 7/31/1997 |
| Polyvinyl Chloride and Copolymers Production | J | 7/10/2002 | 7/10/2005 |
| <u>PRODUCTION OF INORGANIC CHEMICALS</u> | | | |
| Hydrochloric Acid Production (includes Fumed Silica) | NNNNN | 4/17/2003 | 4/17/2006 |
| Mercury Cell Chlor-Alkali Plants | IIIII | 12/19/2003 | 12/19/2006 |
| Phosphoric Acid/Phosphate Fertilizer | AA/BB | 6/10/1999 | 6/10/2002 |
| <u>PRODUCTION OF INORGANIC & ORGANIC CHEMICALS</u> | | | |
| Generic MACT | | | |
| <ul style="list-style-type: none"> Acetal Resins Acrylic/Modacrylic Fibers Hydrogen Fluoride Polycarbonates Production ^c | YY | 6/29/1999 | 6/29/2002 |
| Generic MACT + | | | |
| <ul style="list-style-type: none"> Carbon Black Production Cyanide Chemicals Manufacturing Ethylene Production Spandex Production | YY | 7/12/2002 | 7/12/2005 |
| <u>PRODUCTION OF ORGANIC CHEMICALS</u> | | | |
| Hazardous Organic NESHAP (HON) | F,G,H,I | 4/22/1994 | 5/12/1998 (New Sources) |
| <ul style="list-style-type: none"> Synthetic Organic Chemical Manufacturing Industry (SOCMI) SOCMI-Process Vents, Storage Vessels, Transfer Operations, & Wastewater Equipment Leaks Certain Processes Subject to the Negotiated Regulation for Equipment Leaks Tetrahydrobenzaldehyde Manufacture (Formerly known as Butadiene Dimers Production) | F G H I F | | 5/14/2001 5/14/2001 5/12/1999 Variable 05/12/2001 |
| Miscellaneous Organic Chemical Production & Processes (MON) | | | |
| <ul style="list-style-type: none"> Alkyd Resins Ammonium Sulfate Benzyltrimethylammonium Chloride Carbonyl Sulfide Chelating Agents Chlorinated Paraffins ^c Ethylidene Norbornene ^c Explosives Hydrazine | FFFF | 11/10/2003 | 5/10/2008 |

| INDUSTRY GROUP - Source Category ^a | 40 CFR 63 Subpart | Final Date | Compliance Date ^b |
|--|-------------------|------------|-------------------------------------|
| <ul style="list-style-type: none"> Maleic Anhydride Copolymers Manufacture of Paints, Coatings, & Adhesives OBPA/1,3-diisocyanate ^c Photographic Chemicals Phthalate Plasticizers Polyester Resins Polymerized Vinylidene Chloride Polymethyl Methacrylate Resins Polyvinyl Acetate Emulsions Polyvinyl Alcohol Polyvinyl Butyral Quaternary Ammonium Compounds Rubber Chemicals Symmetrical Tetrachloropyridine ^c | | | |
| MISCELLANEOUS PROCESSES | | | |
| Boat Manufacturing | VVVV | 8/22/2001 | 8/22/2004 |
| Chromium Electroplating | | | |
| <ul style="list-style-type: none"> Decorative Chromium Electroplating Hard Chromium Electroplating Chromic Acid Anodizing | N | 1/25/1995 | 1/25/1996 1/25/1997 1/25/1997 |
| Commercial Sterilizers | O | 12/6/1994 | 12/6/1998 |
| Degreasing Organic Cleaners (Halogenated Solvent Cleaning) | T | 12/2/1994 | 12/2/1997 |
| Dry Cleaning (Perchloroethylene) | | | |
| <ul style="list-style-type: none"> Industrial Dry-to-dry Machines Industrial Transfer Machines Commercial Transfer Machines | M | 9/22/1993 | 9/23/1996 |
| Flexible Polyurethane Foam Fabrication | MMMMM | 4/14/2003 | 4/14/2004 |
| Friction Products Manufacturing | QQQQQ | 10/18/2002 | 10/18/2005 |
| Industrial Process Cooling Towers | Q | 9/8/1994 | 3/8/1995 |
| Leather Tanning & Finishing Operations | TTTT | 2/27/2002 | 2/27/2005 |
| Miscellaneous Coating Manufacturing | HHHHH | 12/11/2003 | 12/11/2006 |
| Plywood and Composite Wood Products (formerly Plywood and Particle Board Manufacturing) | DDDD | 7/30/2004 | 10/1/2007 |
| Pulp & Paper (chemical) MACT I | S | 4/15/1998 | 4/16/2001 |
| Pulp & Paper (combustion) MACT II | MM | 1/12/2001 | See Rule |
| Pulp & Paper (mechanical) MACT III | S | 4/15/1998 | 4/16/2001 |
| Reinforced Plastics Composites Production | WWWW | 4/21/2003 | 4/21/2006 |
| Rubber Tire Manufacturing | XXXX | 7/9/2002 | 7/11/2005 |
| Semiconductor Production | BBBBB | 5/22/2003 | 5/22/2006 |
| Wet Formed Fiberglass Mat Production | HHHH | 4/11/2002 | 4/11/2005 |

Notes:

- Only major sources within any category shall be subject to emission standards under Section 112 unless a finding is made of a threat of adverse effects to human health or the environment for the area sources in a category. All listed categories are exclusive of any specific operations or processes included under other categories that are listed separately.
- The compliance dates listed above are primarily for existing sources. New sources normally have to be in compliance at startup. For more information on the compliance date for a specific source category, refer to the individual subpart. Part 63 NESHAP subparts can be viewed on EPA's Air Toxics web page (<https://www.epa.gov/stationary-sources-air-pollution/list-national-emission-standards-hazardous-air-pollutants-neshap>).
- Equipment handling specific chemicals for these categories or subsets of these categories are subject to a negotiated standard for equipment leaks contained in the HON, which was finalized on April 22, 1994. The specific processes affected within the categories are listed in 40 CFR 63 Subpart I.

Table I-2: Categories of Area Sources of Hazardous Air Pollutants

| Source Category ^a | 40 CFR 63 Subpart | Final Date ^g | Compliance Date ^b |
|--|-------------------|-------------------------|-------------------------------------|
| Acrylic and Modacrylic Fibers Production ^c | LLLLLL | 7/16/2007 | 1/16/2008 |
| <ul style="list-style-type: none"> Aluminum, Copper, and Other Nonferrous Foundries ^c Aluminum Foundries Copper Foundries Other Nonferrous Foundries | ZZZZZZ | 6/25/2009 | 6/27/2011 |
| Asphalt Processing & Asphalt Roofing Manufacturing ^{c, e} | AAAAAAA | 12/2/2009 | 12/2/2010 |
| Brick & Structural Clay | | 12/16/2010 | |
| Carbon Black Production ^d | MMMMMM | 7/16/2007 | 7/16/2007 |
| Chemical Manufacturing ^f <ul style="list-style-type: none"> Agricultural Chemicals & Pesticides Manufacturing Cyclic Crude & Intermediate Production Industrial Inorganic Chemical Manufacturing Industrial Organic Chemical Manufacturing Inorganic Pigments Manufacturing Miscellaneous Organic Chemical Manufacturing (MON) Pharmaceutical Production Plastic Materials and Resins Manufacturing Synthetic Rubber Manufacturing | VVVVVV | 10/29/2009 | 10/29/2012 |
| Chemical Manufacturing: Chromium Compounds ^d | NNNNNN | 7/16/2007 | 1/16/2008 |
| Chemical Preparations ^{c, e} | BBBBBBB | 12/30/09 | 12/30/2010 |
| Chromium Electroplating and Anodizing Tanks ^c <ul style="list-style-type: none"> Chromic Acid Anodizing Hard Chromium Electroplating Decorative Chromium Electroplating | N | 1/25/1995 | 1/25/1997 1/25/1997 1/25/1996 |
| Clay Ceramics Manufacturing ^c | RRRRRR | 12/26/2007 | 12/26/2007 |
| Commercial Sterilizers ^c | O | 12/6/1994 | 12/6/1998 |
| Dry Cleaning Facilities ^c | M | 9/22/1993 | 9/23/1996 |
| Electric Arc Furnaces Steel Facilities ^d | YYYYY | 12/28/2007 | 6/30/2008 |
| Electric Utility Steam Generating Units (Coal- and Oil-fired) | UUUUU | 3/16/2011 | |
| Ferroalloys Production Facilities ^c | YYYYYY | 12/23/2008 | 6/22/2009 |
| Flexible Polyurethane Foam Production and Fabrication ^c <ul style="list-style-type: none"> Flexible Polyurethane Foam Production Flexible Polyurethane Foam Fabrication | OOOOOO | 7/16/2007 | 7/16/2008 |
| Gasoline Distribution Stage I (Bulk Terminals, Bulk Plants, & Pipeline Facilities) ^c | BBBBBB | 1/10/2008 | 1/10/2011 |
| Gasoline Distribution Stage I (Dispensing Facilities) ^c | CCCCC | 1/10/2008 | 1/10/2011 |
| Glass Manufacturing ^d | SSSSSS | 12/26/2007 | 12/28/2009 |
| Gold Mine Ore Processing and Production ^{d, e} | EEEEEEE | 2/17/2011 | 2/17/2014 |
| Halogenated Solvent Cleaners ^c | T | 12/2/1994 | 12/2/1997 |
| Hazardous Waste Incineration ^d | EEE | 9/30/1999 | 9/30/2002 |
| Hospital Sterilizers ^c | WWWWW | 12/28/2007 | 12/29/2008 |
| Industrial, Commercial, and Institutional Boilers ^c | JJJJJ | 3/21/2011 | See rule |
| Iron and Steel Foundries ^c <ul style="list-style-type: none"> Iron Foundries Steel Foundries | ZZZZZ | 1/2/2008 | See rule |
| Lead Acid Battery Manufacturing ^c | PPPPPP | 7/16/2007 | 7/16/2008 |

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| Source Category ^a | 40 CFR 63 Subpart | Final Date ^g | Compliance Date ^b |
|---|---|-------------------------|------------------------------|
| Medical Waste Incinerators | (See 40 CFR 60 Subparts Ce and Ec) | | |
| Metal Fabrication and Finishing ^c | XXXXXX | 7/23/2008 | 7/25/2011 |
| <ul style="list-style-type: none"> Electrical and Electronic Equipment Finishing Operations Fabricated Metal Products Fabricated Plate Work (Boiler Shops) Fabricated Structural Metal Manufacturing Heating Equipment, Except Electric Industrial Machinery and Equipment Finishing Operations Iron and Steel Forging Primary Metal Products Manufacturing Valves and Pipe Fittings | | | |
| Mercury Cell Chlor-Alkali Plants ^d | IIIII | 12/19/2003 | 12/19/2006 |
| Municipal Solid Waste Landfills | AAAA | 1/16/2003 | See rule |
| Municipal Waste Combustors | (See 40 CFR 60 Subparts Ea, Eb, and AAAA) | | |
| Oil and Natural Gas Production ^c | HH | 1/3/2007 | See rule |
| Other Solid Waste Incineration | (See 40 CFR 60 Subpart EEEE) | | |
| Paint Stripping and Miscellaneous Surface Coating ^c | HHHHHH | 1/9/2008 | 1/10/2011 |
| <ul style="list-style-type: none"> Motor Vehicle and Mobile Equipment Surface Coating Paint Stripping Miscellaneous Surface Coating | | | |
| Paints & Allied Products Manufacturing ^c | CCCCCCC | 12/3/2009 | 12/3/2012 |
| Plating & Polishing ^c | WWWWW W | 7/1/2008 | 7/1/2010 |
| Polyvinyl Chloride and Copolymers Production ^{c,e} | DDDDDD | 1/23/2007 | 1/23/2007 |
| Portland Cement Manufacturing ^d | LLL | 6/14/1999 | 6/10/2002 |
| Prepared Feeds Manufacturing ^c | DDDDDDD | 1/5/2010 | 1/5/2012 |
| Primary Copper Smelting ^{d,e} | EEEEEE | 1/23/2007 | 1/23/2007 |
| Primary Nonferrous Metals - Zinc, Cadmium, and Beryllium ^{d,e} | GGGGGG | 1/23/2007 | 1/23/2007 |
| Publicly Owned Treatment Works ^c | VVV | 10/26/1999 | 10/26/2002 |
| Reciprocating Internal Combustion Engines ^c | ZZZZ | 1/18/2008 | See rule |
| Secondary Aluminum Production ^c | RRR | 3/23/2000 | 3/24/2003 |
| Secondary Copper Smelting ^{d,e} | FFFFFF | 1/23/2007 | 1/23/2007 |
| Secondary Lead Smelting ^d | X | 6/23/1995 | 6/23/1997 |
| Secondary Nonferrous Metals Processing ^c | TTTTTT | 12/26/2007 | 12/26/2007 |
| Sewage Sludge Incineration | (See 40 CFR 60 Subparts MMMM & LLLL) | | |
| Wood Preserving ^c | QQQQQQ | 7/16/2007 | 7/16/2007 |
| Wool Fiberglass Manufacturing | NN | 7/29/2015 | 7/31/2017 |

Notes:

- a A finding of threat of adverse effects to human health or the environment was made for each category of area sources listed.
- b The compliance dates listed above are primarily for existing sources. New sources normally have to be in compliance at startup. For more information on the compliance date for a specific source category, refer to the individual subpart. Part 63 NESHAP subparts can be viewed on EPA's Air Toxics web page (<http://www.epa.gov/ttn/atw/area/compilation.html>).
- c Owners or operators of an area source subject to this subpart are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, unless otherwise required by law to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a). Notwithstanding the previous sentence, owners and operators must continue to comply with the provisions of this subpart.
- d Owners or operators of an area source subject to this subpart must obtain a permit under 40 CFR part 70 or 40 CFR part 71.
- e The DNR is not adopting this standard because Iowa does not have, and likely will not have, any affected facilities.
- f Any area source that installed a federally-enforceable control device on an affected CMPI is required to obtain a permit under 40 CFR part 70 or 40 CFR part 71 if the control device on the affected CMPI is necessary to maintain the source's emissions at area source levels. For new and existing sources subject to this rule on December 21, 2012 and subject to title V as a result of this rule, a complete title V permit application must be submitted no later than December 21, 2013. New and existing sources that become subject to this rule after December 21, 2012 must submit a complete title V permit application no later than 12 months after becoming subject to this rule if the source is subject to title V as a result

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of this rule. Otherwise, owners and operators are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, unless otherwise required by law to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a). Notwithstanding the previous sentence, owners and operators must continue to comply with the provisions of this subpart.

g Tentative dates have been italicized.

Appendix J: Compliance Assurance Monitoring

This form will assist in identifying emission units that are subject to Compliance Assurance Monitoring (CAM) requirements. CAM was developed by the Environmental Protection Agency and became effective on November 21, 1997. The regulations related to CAM are located in Title 40, Code of Federal Regulations, Part 64 (40 CFR 64), 567 IAC 223.108(3)"d", and the 1990 Clean Air Act, as amended, Section 504. CAM applies to some major sources that are required to obtain a Title V operating permit. Facilities that operate emission control devices subject to federally enforceable regulations may be subject to CAM.

The CAM rule aims to have owners and operators maintain control equipment at levels that assure compliance. It requires owners and operators to develop CAM plans that select representative parameters upon which compliance can be assured. CAM plans are required as part of the Title V operating permit application. The DNR is responsible for approving the CAM plans and incorporating the appropriate terms and conditions in the Title V permit as specified in 40 CFR 64.6(c) - (e). For sources with approved CAM plans, existing periodic monitoring requirements will be replaced by CAM requirements.

1) Applicability - 40 CFR 64.2

CAM applicability is determined on a **pollutant-by-pollutant basis for each emissions unit**. The CAM Applicability Flowchart at the end of this section will assist in determining CAM applicability. CAM applies to each pollutant-specific emissions unit (PSEU)² that meets ALL of the following criteria:

- Located at a major source required to obtain a Title V operating permit;
- Subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof) that is not exempt (see list of exemptions in section 2);
- A control device is used to achieve compliance with the emission limitation or standard;
- The potential uncontrolled emissions of the applicable regulated air pollutant are greater than or equal to the major source thresholds (ex. 100 tons per year of particulate matter (PM & PM₁₀), nitrogen oxides (NO_x), sulfur dioxide (SO₂), volatile organic compounds (VOC), carbon monoxide (CO), or lead; 10 tons per year of any hazardous air pollutant (HAP); or 25 tons per year of any combination of HAPs); and
- The PSEU is not an exempt backup utility power emissions unit as defined in the exemptions in section 2.

2) CAM Exemptions - 40 CFR 64.2(b)

A. Emission limitations or standards from the following programs are not required to be considered for CAM applicability. Please note, that this does not mean that the pollutant or emission unit as a whole is exempted from CAM if other emissions standards apply.

- New Source Performance Standards (NSPS) or National Emission Standards for Hazardous Air Pollutants (NESHAP) proposed after November 15, 1990
- Stratospheric ozone protection requirements
- Acid Rain program requirements
- Emission limitations or standards that apply solely under an emissions trading program
- An emissions cap that meets the requirements specified in 40 CFR 70.4(b)(12)
- Emission limitations or standards for which a Title V operating permit specifies a continuous compliance determination method, as defined in 40 CFR 64.

² Pollutant-specific emissions unit means an emissions unit considered separately with respect to each regulated air pollutant. (40 CFR 64.1)

B. Municipally-owned backup utility power emission units where:

- the unit is exempt from all acid rain program monitoring requirements,
- the unit operates for the sole purpose of providing electricity during periods of peak electrical demand or emergency situations (note: the facility must provide documentation of historical operating data and relevant contractual obligations to show that this criteria is satisfied), and
- actual emissions from the unit are less than 50 percent of the major source thresholds.

3) **Instructions for using the Part 2 - CAM Calculations spreadsheet to determine applicability**

This spreadsheet is protected when downloaded from the website. If the column headings are incomplete when viewing a sheet, click the "Review" tab in the ribbon and select "Unprotect Sheet". This will allow the user to modify the row and column sizes in order to fully view the information with the cells. Be sure not to alter the formulas contained in the sheets or the form will not function properly.

A. Tab 1 – Emission Units

1. Complete the requested facility information.
2. Answer the question "Is Your Facility a Major Source?" Do the potential emissions from this facility surpass the Title V major source thresholds? If yes, continue to #3. If no, CAM does not apply to this facility and no further information is needed.
3. Complete one row for each emission unit located at the facility. If the number of rows is insufficient for this facility, use the *Part 2 - CAM Calculations – Large Facility* spreadsheet.
4. In the case of emission unit(s) that is subject to an emission standard for a single HAP, list that HAP name in the Source Description for that unit.

B. Tabs 2-8 – Pollutants

Complete the required information for each pollutant emitted from each emission point. Once the point is reached at which the applicability (CAM Required?) column for a pollutant turns to "No", further calculation for that pollutant is not needed.

1. **Controlled Source for XX?** – Is a control device, as defined by 40 CFR 64.1, used to achieve compliance with an emission limitation or standard?
2. **Subject to XX Standards?** – Is the emission unit subject to an emission limit or standard as defined by 40 CFR 64.1?
3. **Post 90 NSPS NESHAP/Exemption?** – Does the emission limit or standard meet the requirements for the exemptions listed in section 2 of this appendix? Please note the exemptions listed in section 2 "A" only apply to the specific emission limit or standard from the applicable program. These exemptions do not universally apply to the emission unit or pollutant. If a unit is subject to multiple emission limits for a pollutant where one of the limits qualifies for a CAM exemption but other limits do not qualify for the exemption, answer "No" in this column.
4. **Pre-Control Emission Potential (Tons/yr)** – Potential emissions of the pollutant prior to passing through the control device. Submit background documentation for how the pre-control emission potential was calculated on a Form CA-01 or similar calculation sheet for each emission unit. Please refer below for the information that should be contained in these calculation sheets.

5. **>=Major?** – Are the pre-control potential emissions greater than major source thresholds? (Yes or No) (Auto Completed)
6. **Post-Control Emission Potential (Tons/yr)** – Potential emissions of the pollutant after passing through the control device. This would be equal to the potential emissions based on the applicable emission limitations or standards. If an emission unit has multiple emission limits for a pollutant, calculate the potential emissions using the most stringent, non-exempted limit.
7. **>=Major** – Are the post-control emission potential emissions greater than major source thresholds (Yes or No)? (Auto Completed)
8. **CAM Required?** – Is CAM required for the pollutant and when the CAM plan is due (Initial, Significant Modification, or Renewal)? (Auto Completed)

4) Example CAM Calculations

There are six basic approaches for calculating the potential pre-controlled emissions from any given emission unit. These methods are (in order of reliability):

1. Stack test measuring emissions prior to passing through the control device (including the 95% confidence interval).
2. Mass balance.
3. EPA approved pre-controlled emission factors.
4. Stack test measuring emissions after passing through the control device (including the 95% confidence interval).
5. Vendor supplied uncontrolled emission factors.
6. Engineering estimates based on best available process operating data.

Potential to emit is calculated assuming equipment is running at maximum capacity while operating at the maximum hours of operation under its physical and operational design. Usually, maximum hours of operation are 8,760 hours per year unless enforceable limitations on hours of operation have been incorporated within the construction permit or an enforcement order for that equipment. Calculation of potential emissions must be done with “worst-case” values for each pollutant.

Only federally enforceable limitations on raw materials, fuels, capacity or hours of operation can be used to limit potential emissions. ‘Bottlenecks’ do not count unless federally enforceable

Emission Calculations

- Alternative Sources:
 - If the source of an emission factor is not a widely available source (such as WebFIRE, AP-42, etc.), a copy of the document must be submitted with the application.
- Stack Test:
 - If the source of an emission factor is a stack test, please indicate the test date and the test method used and include a copy of the Report Summary. Do not submit the entire stack test report. The most recent and approved stack test should be used.
 - In case of a PM/PM₁₀/PM_{2.5} test with less than the minimum catch (or detection limit) of 2.54 mg, 1.44 mg, and 1.35 mg, respectively, the emissions calculation should be based on the minimum

catch. Please note that a PM/PM₁₀/PM_{2.5} test should be designed to catch a minimum of 3 times the detection limits. Similarly, for the tests of other pollutants, the emissions calculation should be based on the minimum/detect level if the stack test reports less than the minimum/detect level of the applicable test method. Facilities have the option of testing for long enough to capture the minimum sample weight required by the test method if they wish to.

○ Calculations using stack test data:

When calculating potential emissions using the average results from a stack test, always include the 95% confidence interval in the emission factor used.

Pre-Control Stack Test

$$[(\text{Average Test result lb/hr}) + (95\% \text{ confidence Interval})] \times (8760 \text{ hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs})$$

When calculating pre-controlled potentials based on a stack test that was completed post control, use the overall control efficiency listed on the Form CE-01.

Post-Control Stack Test

$$[(\text{Average Test result lb/hr}) + (95\% \text{ confidence Interval})] / (1 - \text{CE}) \times (8760 \text{ hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs})$$

• PM/PM₁₀/PM_{2.5} from a paint booth:

- PM, PM₁₀ and PM_{2.5} are considered to be equal from surface coating operations. To calculate PM_{2.5} and PM₁₀ emissions the spray transfer efficiency (TE) of the spray gun must be inserted in the formula used to calculate the VOC and HAP emissions. The transfer efficiency is the percentage of paint from the gun that actually adheres to the part being painted.

$$(\text{Density lb/gal}) \times (\text{Max. annual paint usage gal/hr}) \times (\text{Max. \% solid}) \times (1 - \text{TE}) \times (1 \text{ ton}/2000 \text{ lbs}) \times 8760 \text{ hrs/yr}$$

• Mass balance:

- When calculating potential emissions using mass balance, if multiple raw materials or fuels are used in the emission unit use the product that yields the highest potential emissions for each applicable pollutant.

Example

| | Top Coat | Base Coat |
|------------------------|----------|-----------|
| Paint Weight (lbs/gal) | 8.75 | 7.21 |
| % VOC | 25 | 42 |
| % Solids | 75 | 58 |
| % Xylene | 8 | 2 |
| % Toluene | 0 | 15 |

Calculate the yearly potential VOC emissions

To calculate the maximum amount of VOC emitted from this spray booth in one year, the highest amounts of each constituent from the base or top coat must be used.

In this case the top coat VOC = 0.25 x 8.75 lbs/gal = 2.19 lbs VOC/gal.

The base coat VOC = 0.42 x 7.21 lbs/gal = 3.03 lbs VOC/gal, which is the higher VOC content.

First, multiply the greatest VOC density (base coat 3.03 lbs/gal) by the maximum paint used per hour (7 gallons). To convert it to tons per year divide the answer by 2,000 lbs/ton.

$(\text{Density lbs/gal}) \times (\text{Max. rated capacity gal/yr}) \times (8760 \text{ hrs/yr}) \times (1 \text{ ton}/2,000 \text{ lb}) = 3.03 \text{ lbs/gal} \times 7 \text{ gal/hr} \times 8,760 \text{ hrs/yr} \times 1 \text{ ton}/2,000 \text{ lbs} = 92.90 \text{ tons/yr}$

5) CAM Plan Guideline Worksheet

Use the following worksheet when developing CAM plans in order to be sure that all of the requirements for CAM plans are being met for the facility.

- ☐ Identify the emissions unit, applicable emissions limit or standard, and description of the control technology.
- ☐ Describe the indicators to be monitored.
 - Indicators of performance may include, but are not limited to, direct (pressure drop, temperature, etc.) or predicted emissions (including visible emissions or opacity), process and control device parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities conducted by the owner or operator.
 - The design of indicator ranges or designated conditions may be:
 - Based on a single maximum or minimum value if appropriate (e.g., maintaining condenser temperatures a certain number of degrees below the condensation temperature of the applicable compound(s) being processed) or at multiple levels that are relevant to distinctly different operating conditions (e.g., high versus low load levels).
 - Expressed as a function of process variables (e.g., an indicator range expressed as minimum to maximum pressure drop across a venturi throat in a particulate control scrubber).
 - Expressed as maintaining the applicable parameter in a particular operational status or designated condition (e.g., position of a damper controlling gas flow to the atmosphere through a by-pass duct).
 - Established as interdependent between more than one indicators.
- ☐ Describe the indicator ranges, or the process by which indicators are to be established.
 - The owner or operator shall establish an appropriate range(s) or designated condition(s) for the selected indicator(s) such that operation within the ranges provides a reasonable assurance of ongoing compliance with emission limitations or standards for the anticipated range of operating conditions. Such range(s) or condition(s) shall reflect the proper operation and maintenance of the control device (and associated capture system), in accordance with applicable design properties, for minimizing emissions over the anticipated range of operating conditions at least to the level required to achieve compliance with the applicable requirements.
- ☐ Describe the performance criteria for monitoring, including:
 - Specifications for obtaining representative data
 - Verification procedures to confirm the monitoring equipment's operational status
 - Quality assurance and control procedures
 - Monitoring frequency
 - 4 times per hour (minimum) if **post**-control emissions are greater than or equal to the major source thresholds
 - 1 time per day (minimum) if **post**-control emissions are less than the major source thresholds
 - Data averaging period
- ☐ Provide detailed justification for the proposed monitoring parameters.
 - The owner or operator also shall submit any data supporting the justification, and may refer to generally available sources of information used to support the justification (such as generally available air pollution engineering manuals, or EPA or permitting authority publications on

appropriate monitoring for various types of control devices or capture systems). To justify the appropriateness of the monitoring elements proposed, the owner or operator may rely in part on existing applicable requirements that establish the monitoring for the applicable pollutant-specific emissions unit or a similar unit.

- ☐ Provide any emissions test data to support the proposed monitoring parameters.
- The owner or operator shall submit control device (and process and capture system, if applicable) operating parameter data obtained during the conduct of the applicable compliance or performance test conducted under conditions specified by the applicable rule. If the applicable rule does not specify testing conditions or only partially specifies test conditions, the performance test generally shall be conducted under conditions representative of maximum emissions potential under anticipated operating conditions at the pollutant-specific emissions unit. Such data may be supplemented, if desired, by engineering assessments and manufacturer's recommendation to justify the indicator ranges (or, if applicable, the procedures for establishing such indicator ranges). Emission testing is not required to be conducted over the entire indicator range or range of potential emissions.
 - If existing data from unit-specific compliance or performance testing are not available, the owner or operator:
 - Shall submit a test plan and schedule for obtaining such data; or
 - May submit indicator ranges (or procedures for establishing indicator ranges) that rely on engineering assessments and other data, provided that the owner or operator demonstrates that factors specific to the type of monitoring, control device, or pollutant-specific emissions unit make compliance or performance testing unnecessary to establish indicator ranges at levels that satisfy the criteria in 40 CFR 64.3(a).
- ☐ An implementation plan for installing, testing, and operating the monitoring equipment (if required).

6) Deadlines for CAM Plans - 40 CFR 64.5

CAM plans are due as part of an initial, significant modification, or renewal Title V permit application. The majority of CAM plans will be due with renewal applications. Refer to the flowchart on the following page to determine when facility CAM plan(s) are due.

7) Attachments

Attach any required CAM plan(s) to each Part 2 - Emission Point Information form for which CAM is applicable.

CAM Applicability Flowchart

(Applicability is determined on a pollutant-by-pollutant basis for each emissions unit)

